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ASHLEY HOUSE, TOTTENHAM HALE

PHASE 1 GEOTECHNICAL AND GEOENVIRONMENTAL DESK STUDY

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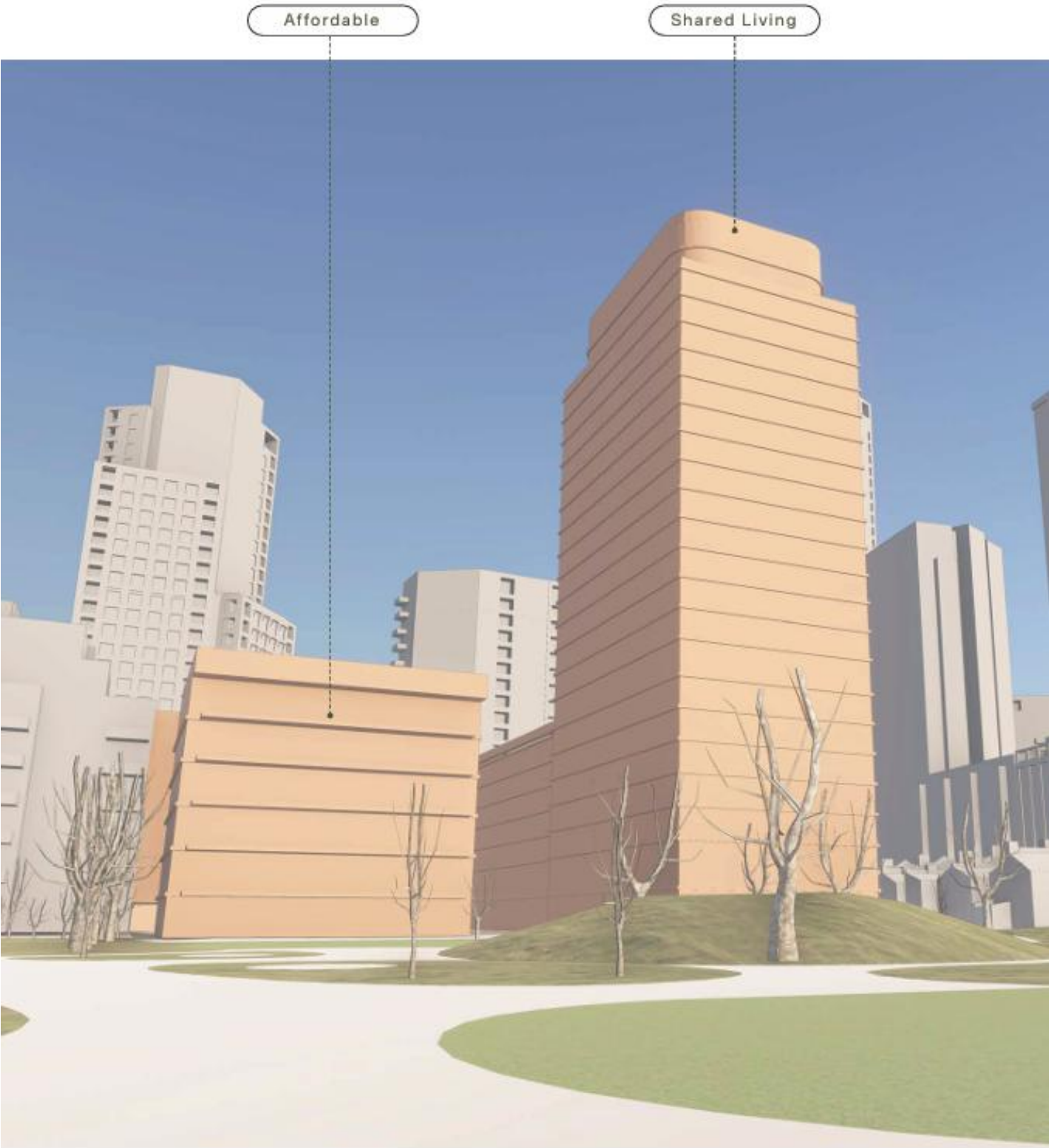
DISCLAIMER

Whitby Wood Limited (WW) is appointed by client **Re:Shape Ltd** to provide Structural, Civil and Geotechnical consultancy services for the development of Ashley House, Tottenham Hale.

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EXECUTIVE SUMMARY

Appointment and Introduction
This Phase 1 Geotechnical and Geoenvironmental Desk Study has been prepared to support early design development and planning, using available third-party information, Envirocheck/BGS datasets and site walkover observations. No site-specific intrusive ground investigation data were available at the time of writing; therefore, the conclusions are preliminary and subject to confirmation by future ground investigation and monitoring. The red line boundary in this report is indicative and represents the boundary available at the time of writing. In addition, an Envirocheck Environmental report was conducted for the entirety of the Ashley Park site area which includes the Ashley House site in the south and the Cannon Factory site in the north of the boundary. However, this Phase 1 Desk Study considers only the Ashley House site.
Site and development
The Ashley House site is bounded by 2 Ashley Road (West Apartments), Ashley Road, Down Lane Park, and the Rosa Luxemburg apartments. The proposal comprises construction of two residential blocks, an affordable living and a shared living block, aiming to provide approximately 540 shared-living units, 87 affordable social rented homes, commercial and employment spaces, and new community space. The current scheme comprises: • a Ground floor +5-storey affordable living block; • a Ground floor +23-storey shared living block; The proposals include delivering a mix of residential and commercial/amenity uses across the site. The London Underground Victoria Line spur tunnel beneath/adjacent to Watermead Way and Station Road represent a key third-party constraint. The proposed works will require early engagement with London Underground Limited (LUL) and the adoption of appropriate movement control measures.
Preliminary ground model and geotechnical implications
The anticipated geological sequence comprises Made Ground over Enfield Silt and Kempton Park Gravels over London Clay, with deeper strata including the Lambeth Group and Thanet Sands. The current ground model is based on nearby BGS boreholes and regional datasets; uncertainty therefore remains until a site-specific ground investigation confirms stratigraphy, thicknesses and variability. According to the borehole records available, groundwater is expected to be encountered approximately 4.00mBGL within the Kempton Park Gravels. A foundation options appraisal indicates that piled or piled-raft foundations are likely to be required for the shared living block, while shallow/raft solutions may be feasible for the affordable block subject to confirmation of settlement performance and LUL constraints.
Preliminary geoenvironmental implications
Walkover observations identified potential sources of contamination from the presence of an electrical sub-station on the site, and stockpiles of demolished material. As such, contamination within Made Ground and potential groundwater risk remain plausible and should be confirmed through targeted geoenvironmental investigation and testing. A qualitative risk assessment is included, with further quantitative assessment recommended where required by the findings and proposed end use.
Next steps
The key next steps are to: • undertake a site-specific ground investigation (stratigraphy, geotechnical parameters and groundwater monitoring); and • confirm LUL asset information (tunnel line/level and requirements) to inform movement assessments, construction controls and monitoring proposals.



1 INTRODUCTION

1.1 PROJECT OVERVIEW

The client Re:Shape Ltd has commissioned Whitby Wood to undertake a Phase 1 Geotechnical and Geoenvironmental Desk Study for the proposed development known as Ashley House, Tottenham Hale (the “Site”).

The Site is located at Ashley Park, 414 Ashley Rd, London, N17 9LZ, and is bounded by Rosa Luxemburg apartments to the north, Ashley Road to the east, 2 Ashley Road (West Apartments) to the south, and Down Lane Park to the west. The approximate grid reference is E534317, N189668.

This desk study is intended to inform early design development and identify potential geotechnical and geoenvironmental constraints prior to submission of a planning application. The assessment draws upon available information from nearby borehole records, Envirocheck and BGS datasets, together with observations from a recent site walkover.

1.2 PROPOSED DEVELOPMENT

The previous buildings located on the Ashley House site have been demolished and the proposed redevelopment will comprise the construction of two mixed-use buildings (Class C3 and Class E), with commercial use at ground level and a mix of shared-living and social housing and social living units above. The proposal also includes a new public realm, car and cycle parking, and other associated works. A plan of the proposed scheme at Ashley House is presented in Figure 1. It is to be noted that the red line boundary in Figure 1 is indicative. The proposed development will consist of the following:

- Ground floor + 5 storey affordable living block;
- Ground floor + 23 storey shared living block;
- New public realm;
- Car and cycle parking;

The planning and installation of significant ground works such as pile installations for the proposed affordable and shared-living units will require consultation from London Underground Limited due to the presence of London Underground Victoria Line spur tunnel beneath/adjacent to Watermead Way and Station Road.

No site-specific intrusive ground investigation data were available at the time of writing; the conclusions are therefore preliminary and subject to confirmation by future investigation.

This Phase 1 desk study is intended to support early design development and planning, and to inform the scope of future ground investigation.

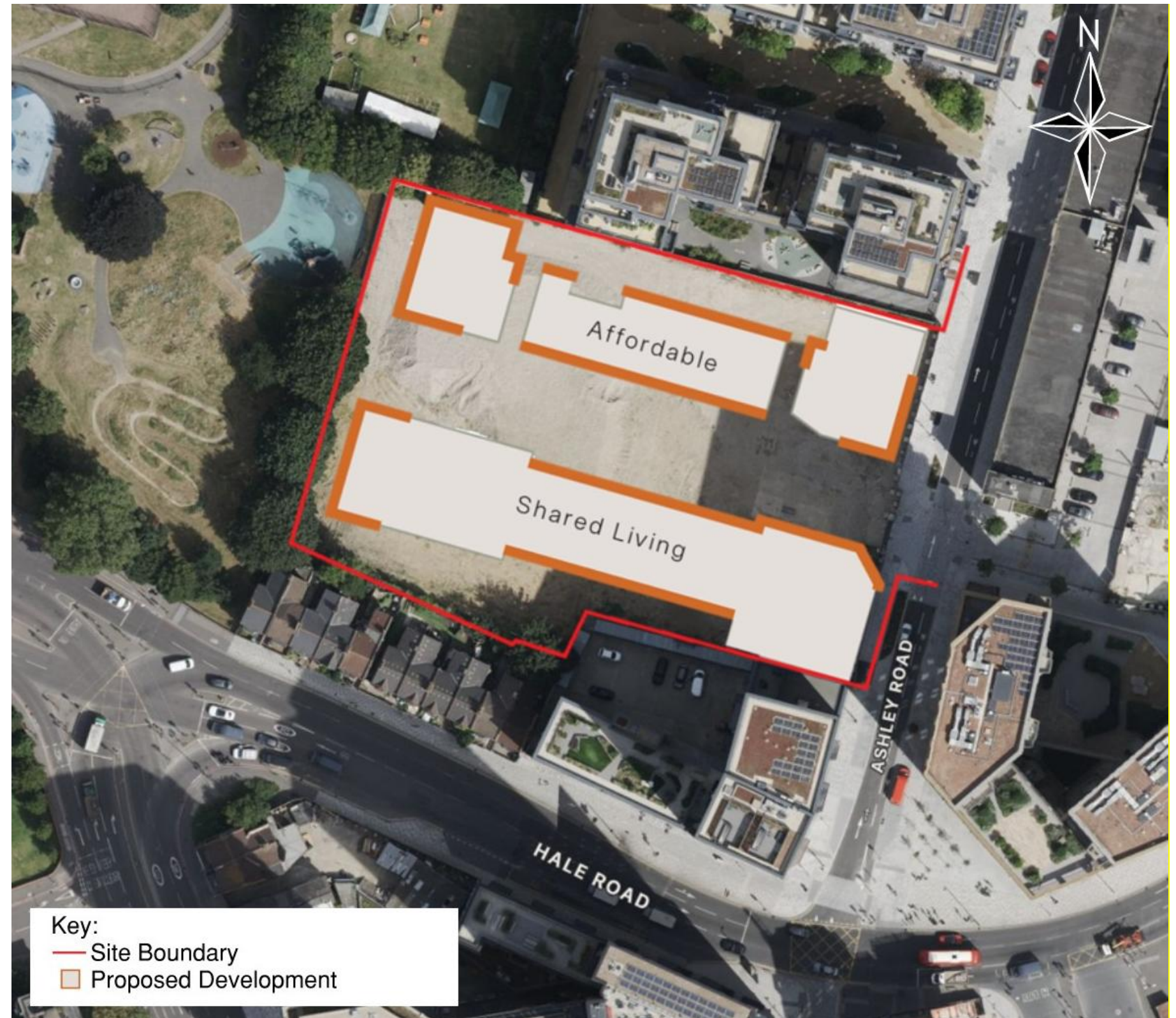


Figure 1: Site and proposed development location

1.3 THE BRIEF AND OBJECTIVES

This report reviews the available information relevant to the Site to:

- Establish baseline geoenvironmental conditions, including a preliminary Conceptual Site Model (CSM).
- Establish baseline geotechnical conditions, including a preliminary geotechnical assessment.
- Identify preliminary site constraints and potential issues, including a geotechnical risk register.
- Summarise the known site history and historical land uses.
- Assess potential contamination risks through a Preliminary Risk Assessment (PRA).
- Identify gaps in the available information and provide recommendations for further work, such as a design ground investigation, site investigation specification, and/or a Generic Quantitative Risk Assessment (GQRA) or Detailed Quantitative Risk Assessment (DQRA), as appropriate.

1.4 SOURCES OF INFORMATION

The following sources of information have been used as part of this desk study:

- Landmark Envirocheck Report (Appendix A)
- British Geological Survey (BGS) Onshore GeoIndex (<https://www.bgs.ac.uk/information-hub/borehole-records/>)
- Google Maps and Google Earth (accessed on 14/01/26)
- Historic England Map Viewer (<https://historicengland.org.uk/listing/the-list/map-search>)
- Flood Risk Information Portal (<https://flood-map-for-planning.service.gov.uk/>)
- Historic England APA ArcGIS Map Viewer (<https://opendata-historicengland.hub.arcgis.com/datasets/historicengland::greater-london-archaeological-priority-areas-apas/explore?location=51.487320%2C-0.084602%2C9.57>)
- UK Radon Maps dataset (<https://www.ukradon.org/information/ukmaps>)
- Groundwise Searches Ltd - Comprehensive Desktop Utility Search
- LUL asset map viewer (TfL's Public Property Asset Register Web App)

1.5 LIMITATIONS

This report is subject to limitations that require certain assumptions to be made when drawing conclusions about the Site. These assumptions are stated and justified throughout the report. Key limitations include:

- No site-specific ground investigation: At the time of writing, no site-specific intrusive ground investigation has been undertaken for the proposed development. Geoenvironmental and geotechnical conclusions are therefore preliminary and will need to be reviewed and, where necessary, updated following completion of site-specific investigation, monitoring and laboratory testing.
- Design information at the time of writing: This report is based on the development proposals available at the time of issue. Material changes to the proposed layout, basement extent/depth, foundation solution, construction methodology or sequencing may affect the conclusions and recommendations and may require reassessment of risks, constraints and further work requirements.
- Reliance on third-party information: This report relies on information obtained from external sources and third parties. Whitby Wood has used reasonable skill and care in reviewing the available information; however, Whitby Wood cannot warrant the completeness or accuracy of third-party data and interpretations.

2 SITE SETTING AND HISTORY

2.1 SITE DESCRIPTION

The Site located on Ashley Road with an approximate grid reference of E534317, N189668 occupies an approximately trapezoidal plot and is currently a brownfield site with historically industrial and recently residential uses. It is located in the London Borough of Haringey and covers approximately 8,200 square metres. It is a relatively flat site with the ground level ranging between 7.30 and 8.00m AOD.

The surrounding area is an urban environment comprising commercial, residential, and industrial uses. It is directly bounded by Rosa Luxemburg apartments to the north, Ashley Road to the east, 2 Ashley Road (West Apartments) to the south, and Down Lane Park to the west.

This desk study is intended to inform early design development and identify potential geotechnical and geoenvironmental constraints prior to submission of a planning application. The assessment draws upon available information from nearby borehole records, Envirocheck and BGS datasets, together with observations from a recent site walkover.

2.2 SITE CONSTRAINTS

The following general site constraints have been identified and are discussed in further detail in the Constraints Plan, document: P452287-WW-XX-ZZ-SK-S-00003.

- Proximity to TfL Infrastructure:**
 The London Underground Victoria Line Spur tunnels run beneath Ashley Road East Site and adjacent to Ashley Road West Site. The London Underground Limited (LUL) zone of interest runs adjacent to the south-eastern site boundary (refer to Figure 4). The available information indicates approximately 8m cover to the tunnel axis. Proposed excavation and piling works may require further liaison with TfL / London Underground Limited (LUL) and compliance with LUL asset protection requirements.
- Access and Space Constraints:**
 The Site is located within a dense urban area with constrained working space, which may restrict access for construction plant, site investigation equipment, material storage and logistics. Construction sequencing and temporary works will need to consider these constraints.
- Existing Utilities and Services**
 Utility records (including Thames Water and UK Power Networks) have been provided at this stage. However, it should be assumed that records may be incomplete and that additional/unknown services may be present. Known Thames water sewer and UK Power Network assets are shown in Figure 3. A PAS128 utility survey and targeted trial pits may be required to confirm utility locations/depths before intrusive works and construction.
- Retention /protection of existing building and facades:**
 The redevelopment proposals may include retained elements of the existing Rosa Luxemburg Apartments and Ashley Road West Site (including potential façade retentions). The proposed works will therefore need to consider potential impacts to retained structures, including ground movements from excavation and foundation installation, and the need for monitoring and protection measures where required.

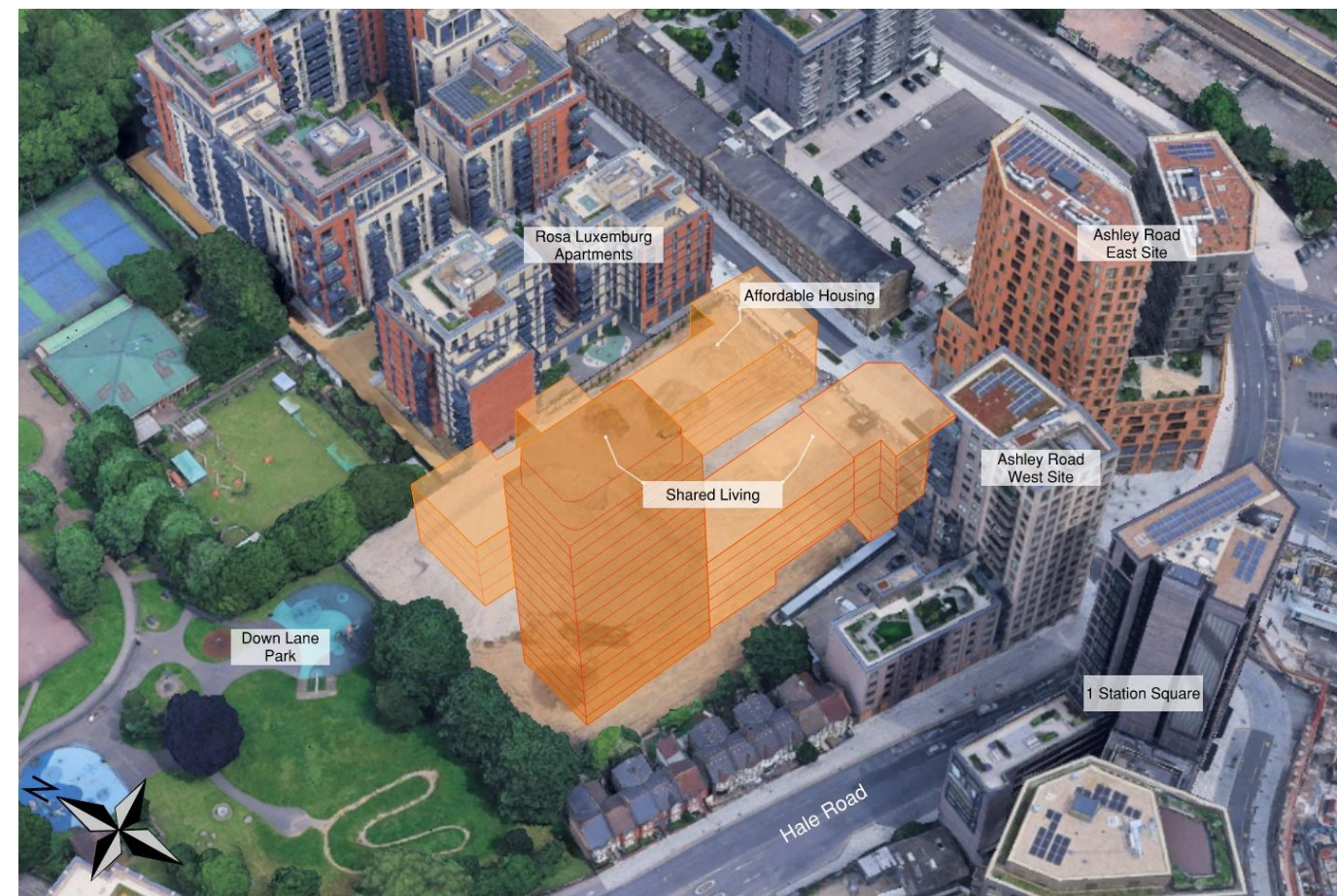


Figure 2: Ashley House site location and proposed development



Figure 3: Site Constraint

2.3 LONDON UNDERGROUND ASSETS

The London Underground Victoria Line Spur tunnels run beneath Ashley Road East Site and adjacent to Ashley Road West Site. The London Underground Limited (LUL) zone of interest (ZoI) runs adjacent to the south-eastern site boundary (refer to Figure 4).

Any works within, or in proximity to, the zone of interest will require consultation with TfL/LUL and compliance with their asset protection requirements. Appropriate assessments are likely to be required to demonstrate that ground movements resulting from the proposed works (including basement excavation, retaining wall construction, piling and any dewatering) will not adversely affect the tunnels. These typically include a ground movement assessment, agreement of construction controls, and (where required) a monitoring strategy.

At the time of writing, the line and level of the tunnels have not been confirmed from LUL asset records. Confirmation of tunnel geometry (including depth, diameter and any local features) will be required to accurately assess the relationship between the tunnels and the proposed development.

Based on available third-party information reviewed to date, received from works at a separate local development on Ashley Road East Site, the tunnels are anticipated to be within London Clay and at approximately 8.00-10.00m below ground level; this should be treated as indicative only and should be confirmed by LUL asset records/survey.

Given the overlap between the proposed building footprints and the LUL ZoI, careful design development and construction sequencing may be required to prevent adverse impacts on the Victoria Line infrastructure. It is likely that ground movement and damage category assessments will be required to justify that there is no significant impact on the tunnels as a result of the proposed development. To inform these assessments, line and level surveys of the tunnels/tracks are required as well as preliminary construction staging.

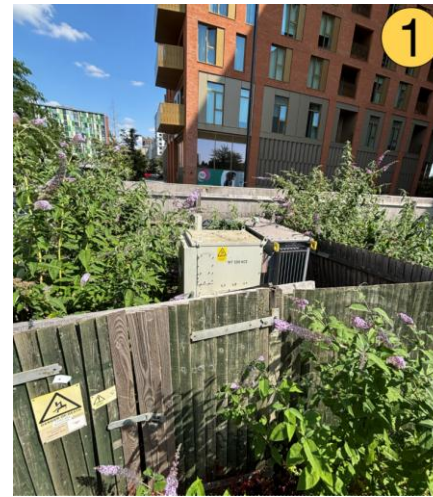
At this stage, it is recommended to continue engagement with LUL to confirm tunnel geometry and agree requirements for asset protection, including assessment scope, monitoring and construction controls.



Figure 4: Property Asset Register Public Web Map (Transport for London, Accessed 23/06/2026)

2.4 SITE WALKOVER

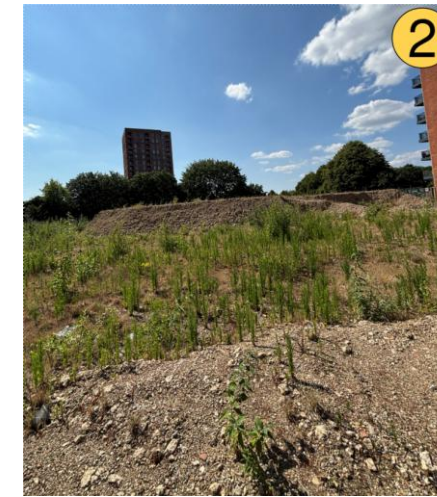
A site walkover was undertaken by Whitby Wood on 8th July 2026. Observations identified the potential sources of contamination; the electrical sub-station at the site entrance and demolition stockpiles. These findings suggest the possible presence of hydrocarbons, oils, heavy metals, asbestos, and other made ground contaminants, which will be considered in the conceptual site model.



Location (facing ESE): Site entrance on Ashley Road, inside the gates

Observation: Electrical sub-station present

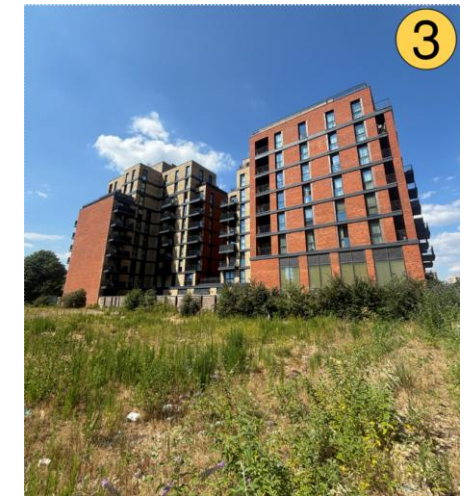
Relevance: Potential contamination source (oils) and services constraint; confirm



Location (facing WNW): Site entrance on Ashley Road, inside the gates

Observation: Demolition waste stockpile, and vegetation

Relevance: Potential contamination source (asbestos)



Location (facing NW): Rosa Luxemburg apartments

Observation: Proximity of Rosa Luxemburg Apartments to site

Relevance: Potential need for façade retention during works; confirm retention strategy



Location (facing SE): Ashley Road East apartments

Observation: Proximity of Ashley Road East to site

Relevance: Potential need for façade retention during works; confirm retention strategy



Location (facing ESE): Site boundary at Ashley Road East apartments

Observation: Presence of sheet pile wall

Relevance: Proximity of neighbouring foundations to site; possible below-ground obstruction



Location (facing SW): Ashley Road

Observation: Site hoarding on Ashley Road

Relevance: Access/plant constraints due to site being located in an urban environment



Location (facing E): Ashley Road

Observation: Row of neighbouring terraced residential units

Relevance: Adjacent structure risk; confirm monitoring requirements



Location (facing SSE): Down Lane Park

Observation: Trees at Down Lane Park side of site boundary

Relevance: Risk of root obstruction during construction; tree influence

Figure 5: Site Walkover Observation Photos On the 8th of July. Observations identified an on-site electrical sub-station (potential contamination), site access constraints, structural and ground conditions, and potential hazards.

2.5 SITE HISTORY

A chronological review of the available site-specific historical maps provided by Landmark (Appendix 1) has been carried out and key historical development and land uses (inclusive of potentially contaminative uses) are summarised below. Historical records are available from 1873; they show that during the early 1900s, the site had been developed into a braid and bootlace factory then redeveloped in 1934-35 into a printing ink and varnish factory. Historically, the surrounding area featured intensive urbanisation and industrial activities. The industrial activities and nearby railway indicate that there is a persistent moderate contamination risk, primarily associated with Made Ground and potential hydrocarbons and metals. The limit for information to be deemed relevant is 250m, unless stated otherwise. *N.B., an Envirocheck environmental report was conducted for the entirety of the Ashley Park site area (Ashley House to the south and Cannon Factory to the north). However, only site history regarding Ashley House is covered below.*

Figure 6: Site History



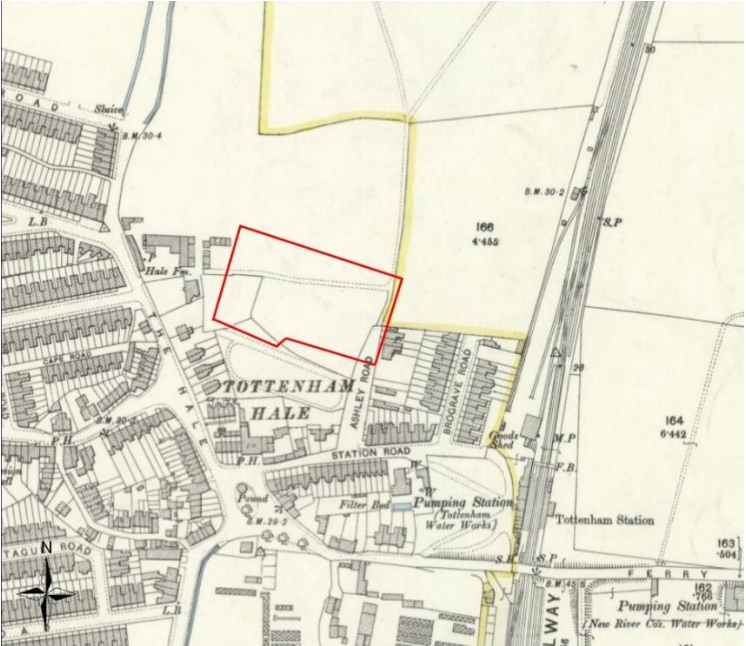
1873

On-site: The site appears to have remained predominantly undeveloped (greenfield), with only limited isolated development present.

Off-site: The surrounding area is predominantly residential to the south of the site and greenfield to the north and east. Tottenham station and the railway line are present to the south-east and east of the site respectively.

Potential contamination: Railway proximity may locally increase the potential for hydrocarbon and metal contamination

Map Reference: Reproduced with the permission of the National Library of Scotland. (View map: [Ordnance Survey, Middlesex Sheet XII \(Hackney; Hornsey St Mary; Islington; Stoke Newington; Tottenham; Walthamstow; W...](#) - Ordnance Survey Six-inch England and Wales, 1842-1952)



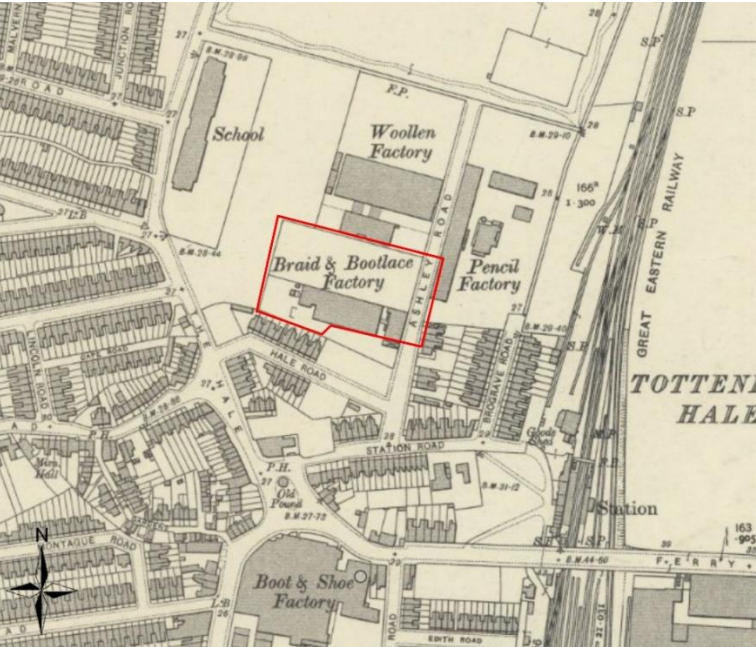
1896

On-site: The site appears to have remained predominantly undeveloped.

Off-site: Previously undeveloped greenfield land to the west and south of the site have now been developed with what can be assumed to be housing.

Potential contamination: primarily associated with Made Ground from construction and redevelopment activities, including brick rubble, ash and domestic refuse. Localised increased risk may be present near the railway corridor, where hydrocarbons and metals could occur.

Map Reference: Reproduced with the permission of the National Library of Scotland. (View map: [Ordnance Survey, London \(Edition of 1894-96\) XIII \(Tottenham\) - Ordnance Survey 25-inch England and Wales, 1841-1952\)](#))



1915

On-Site: The site is shown to have been changed from an undeveloped greenfield site to a braid and bootlace factory.

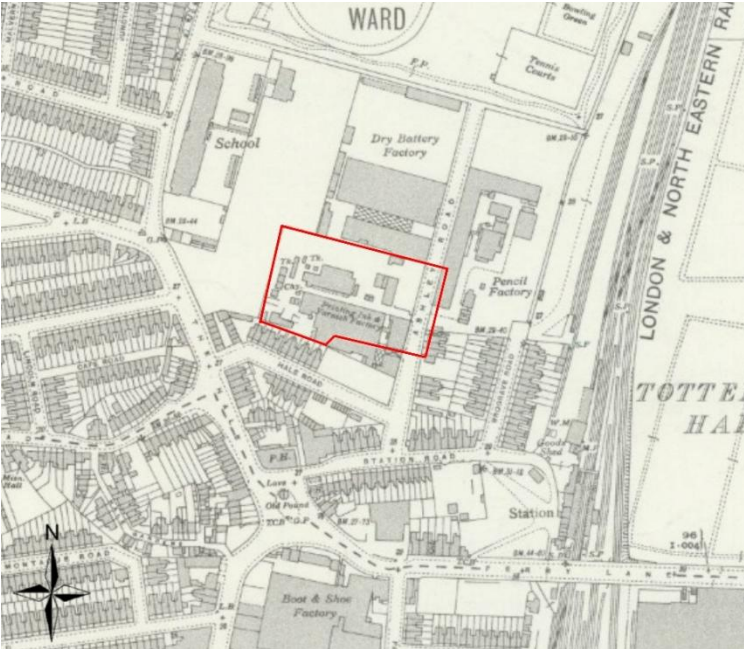
Off-Site: Directly north to the site, the vacant land has been developed into a woollen factory. Directly south-west to the site, the residential area has been expanded with more regular and ordered arrangement of dwellings. Directly to the east of the site, the development of a pencil factory has replaced previously vacant land.

The land approximately 250m to the south of the site has been developed into a boot and shoe factory. A school and school grounds have replaced previously unnamed dwellings to the north-west of the site.

Approximately 430m north of the site (not pictured), a refuse destructor has been developed.

Potential Contamination: The introduction of on-site and off-site adjacent industrial use indicates a possible contamination risk of hydrocarbons, metals, solvents, ash/clinker, PAH's, and industrial residues – to be confirmed by GI.

Map Reference: Reproduced with the permission of the National Library of Scotland. (View map: [Ordnance Survey, Essex \(New Series 1913-\) n LXXVII.7 \(Tottenham\) - Ordnance Survey 25-inch England and Wales, 1841-1952\)](#))



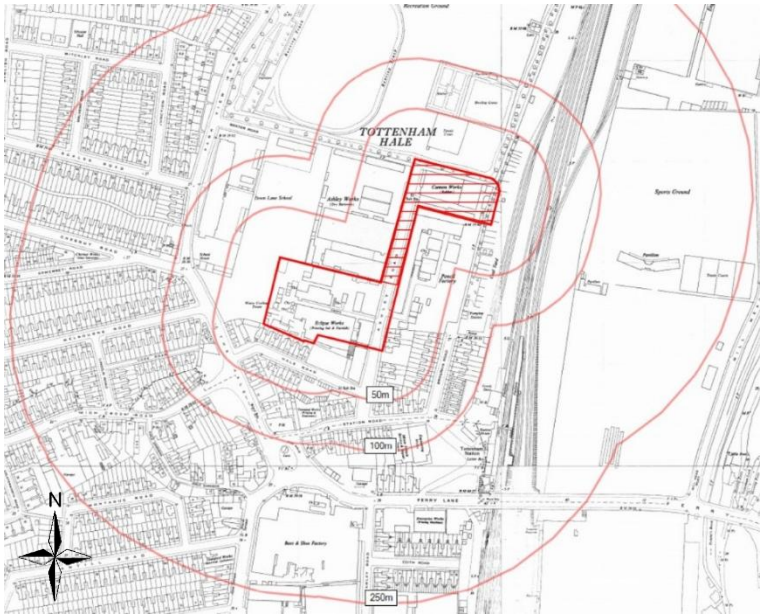
1939

On-Site: The braid and bootlace factory is redeveloped into a printing ink and varnish factory.

Off-Site: The woollen factory to the north of the site is redeveloped into a dry battery factory. A recreation ground with areas for athletics, tennis and a bowling green is established in the previously empty land north of the school and dry battery factory. The remainder of the area remains largely unchanged

Potential Contamination: The redevelopment of the boot and lace factory into a printing ink and varnish factory likely introduced volatile organic compound (VOC) contaminants. The development of a dry battery acid likely introduced contaminants of metals. The continuous industrial activity indicated an increased chance of fuel and combustion residue contamination.

Map Reference: Reproduced with the permission of the National Library of Scotland. (View map: [Ordnance Survey, Essex \(New Series 1913-\) n LXXVII.7 \(Tottenham\) - Ordnance Survey 25-inch England and Wales, 1841-1952\)](#))



1955

On-Site: An additional building on the north side of the site has been developed as well as the establishment of a water-cooling tower on the west border of the site.

Off-Site: The surrounding area remains predominantly unchanged. A previously unmarked building 75m south of the site is now identified as a printing and stationery factory. An additional previously unmarked building 175m south-east of the site is identified as a printing machines factory. 50m south of the site an electrical sub-station has been erected. 75m east of the site a pumping station is erected in the railway Coal Yard.

Potential Contamination: The increase in industrial use indicates a continuous contamination risk, with potential contaminants including hydrocarbons, metals, fuel, combustion residue, and VOCs.



1961-1979

On-Site: No significant changes

Off-Site: Redevelopment of High Cross Road 100m south-west to the site, including demolition of previous residential buildings and construction of shared housing. Construction of electrical sub-station directly south of the site. Development of rail related works structure 100-250m south-east of site.

Potential Contamination: Construction of electrical sub-station likely to introduce higher levels of metal contamination. No significant new industrial source, any new contaminants primarily associated with Made Ground from construction and redevelopment activities, including brick rubble, ash and domestic refuse.



1979-1991

On-Site: Complete demolition of ink and varnish factory and any related structures.

Off-Site: Demolition of electrical sub-station directly south of site. Demolition and redevelopment of boot and shoe factory, and residential buildings into what is now a retail park 100-250m south of site. Demolition and redevelopment of residential buildings into primary school 250m south-west of site. Redevelopment of junction 100m south of site.

Potential Contamination: No significant new industrial source. Any new contaminants primarily associated with Made Ground from demolition, construction, and redevelopment activities, including brick rubble, ash and domestic refuse.



1991-1994

On-Site: Construction of Ashley House with two industrial buildings to the north and west of the site boundary, as well as a car park. An electric sub-station is also built on the south boundary of the site.

Off-Site: Adjacent to the south-south-east boundary of the site, a petrol station is constructed. Further development of the roads/junctions 100m south of site has taken place. Demolition of school 50-100m north-west of site and extension of Down Lane Park from north to previous location of school and adjacent to west boundary of site. Erection of electrical sub-station 75m south of site. Rail related works structure 100-250m south-east of site identified as the railway depot.

Potential Contamination: Construction of petrol station and erection of electrical sub-stations introduce increased risk of metals, hydrocarbon, fuel and combustion residue. Further contribution of contaminants associated with Made Ground (brick rubble, ash, and domestic refuse) from demolition, construction, and redevelopment works.

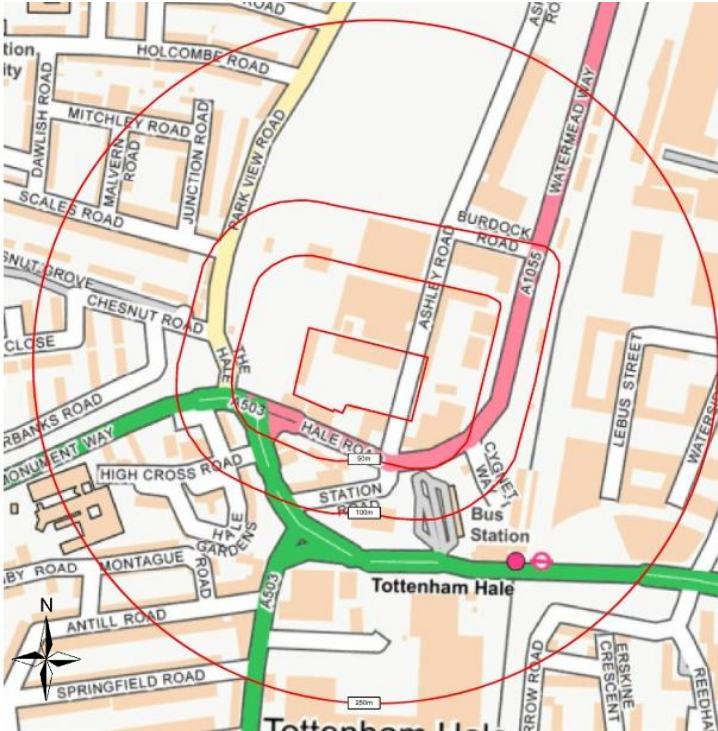


1999

On-Site: No significant changes observed.

Off-Site: Construction of building 100m south of site.

Potential Contamination: No new sources of contamination. Any new contaminants primarily associated with Made Ground from demolition, construction, and redevelopment activities, including brick rubble, ash and domestic refuse.

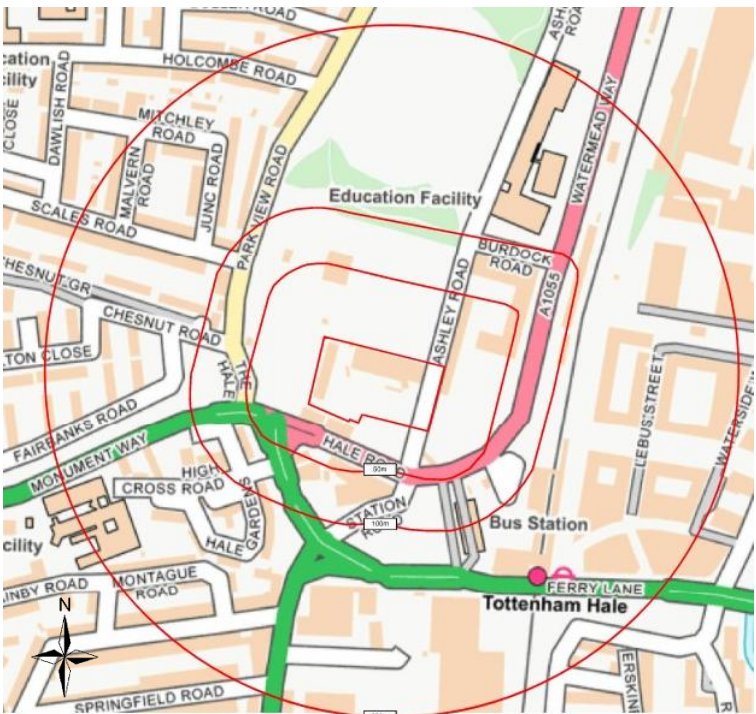


2016

On-Site: No significant changes observed.

Off-Site: Diversion of A503 100m south-east of site for development of Tottenham Hale Bus Station. Demolition of railway depot 250m east of site – redeveloped into residential blocks.

Potential Contamination: No new sources of contamination. Any new contaminants primarily associated with Made Ground from demolition, construction, and redevelopment activities, including brick rubble, ash and domestic or retail refuse.

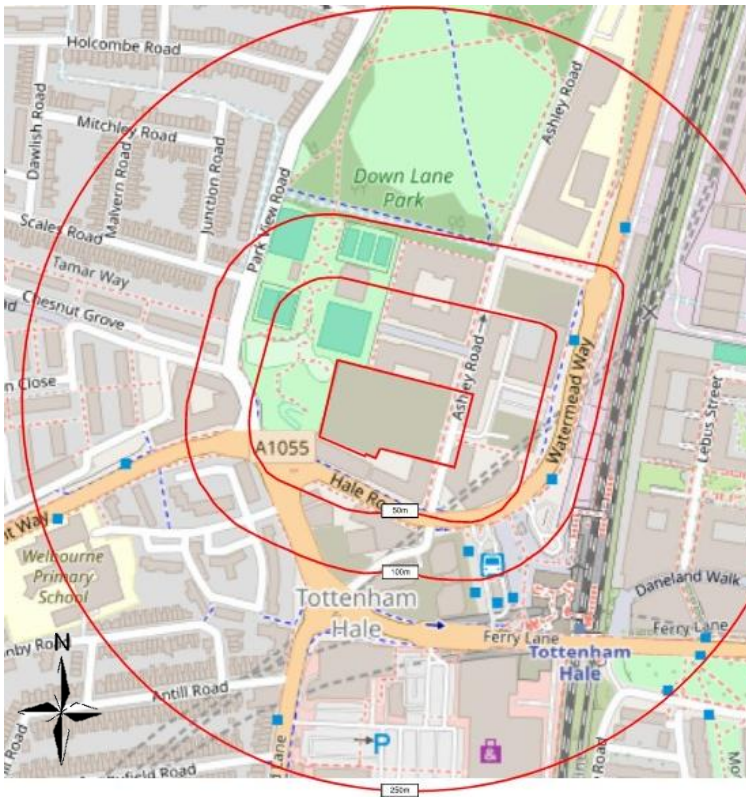


2022

On-Site: No significant changes observed.

Off-Site: Previously listed factory buildings have been demolished directly north of site. Petrol station directly south of site demolished.

Potential Contamination: No new sources of contamination. Any new contaminants primarily associated with Made Ground from demolition, construction, and redevelopment activities, including brick rubble, ash and domestic or retail refuse.



2026

On-Site: Ashley House residential development demolished.

Off-Site: Rosa Luxembourg Apartments constructed on vacant land directly north of site. Building known as Cannon Factory 50m south-east of site also demolished.

Potential Contamination: No new sources of contamination. Any new contaminants primarily associated with Made Ground from demolition, construction, and redevelopment activities, including brick rubble, ash and domestic or retail refuse.

2.6 GROUND CONDITIONS

2.6.1 British Geological Survey (BGS) Geological Maps

The BGS Map in Figure 7 indicates that the superficial geology immediately beneath the site comprises Enfield Silt, Alluvium, and Kempton Park Gravel. Figure 8 shows the mapped bedrock beneath the site as London Clay. No other bedrock strata are recorded directly below superficial deposits within a 1000m radius of the site. London Clay is anticipated to be underlain by the Lambeth Group, Thanet Sands and Chalk Formation.

2.6.2 BGS Borehole Information

Eleven available historical BGS boreholes located in proximity to the site (Figure 9) have been reviewed as part of this desk study assessment. The general information of the selected boreholes is presented in Table 1, and the geology encountered within these boreholes is summarised in Table 2.

The BGS borehole records around the site indicate a sequence of superficial deposits underlain by bedrock formations. The superficial deposits comprise Made Ground, underlain by Enfield Silts, underlain by Kempton Park Gravels. Made Ground typically comprises flint, brick, clay, timber, concrete, and rubble – reflecting historical urban development. The Enfield Silts are anticipated to primarily feature silty sandy clay, although some boreholes have also reported presence of some gravel. The Kempton Park Gravels are reported to consist of brown clayey sandy gravels but are also reported as ballast in several borehole logs.

The superficial deposits are underlain by the London Clay Formation, a thick, stiff, and fissured blue clay known for its low permeability and generally stable engineering behaviour, although it may undergo volume changes with moisture variations. The London Clay in this area is approximately 17 m thick.

Underlying the London Clay is the Lambeth Group. While the specific sub-unit encountered is not definitively known, the upper layers are typically cohesive. With depth, the materials become increasingly granular, ranging from mottled clays to dense pebbly sands. This unit is approximately 14 m thick.

Beneath the Lambeth Group lies the Thanet Sand Formation. Information from the historical BGS logs is limited, with many over 100 years old, though available records indicate a thickness of approximately 8m to 10m of silty Sand.

The lowermost formation encountered, at approximately 45 m below ground level, is Chalk, a relatively stable stratum well known for its significant water-bearing capacity.

It should be noted that all BGS boreholes are located outside the site boundary, and ground levels were not available for some boreholes. Consequently, sections AA and B-B, shown in Figure 10 and Figure 11, represent an indicative geological sequence only.

It should also be noted that the BGS borehole log data used is relatively old. Therefore, a site-specific ground investigation will be required to confirm the actual subsurface conditions and geotechnical parameters on site.

Figure 9 graphically represents this information included within the geological section. Only the highlighted boreholes were used as they were deemed the most relevant; the remaining boreholes were excluded to avoid excessive density within the section.

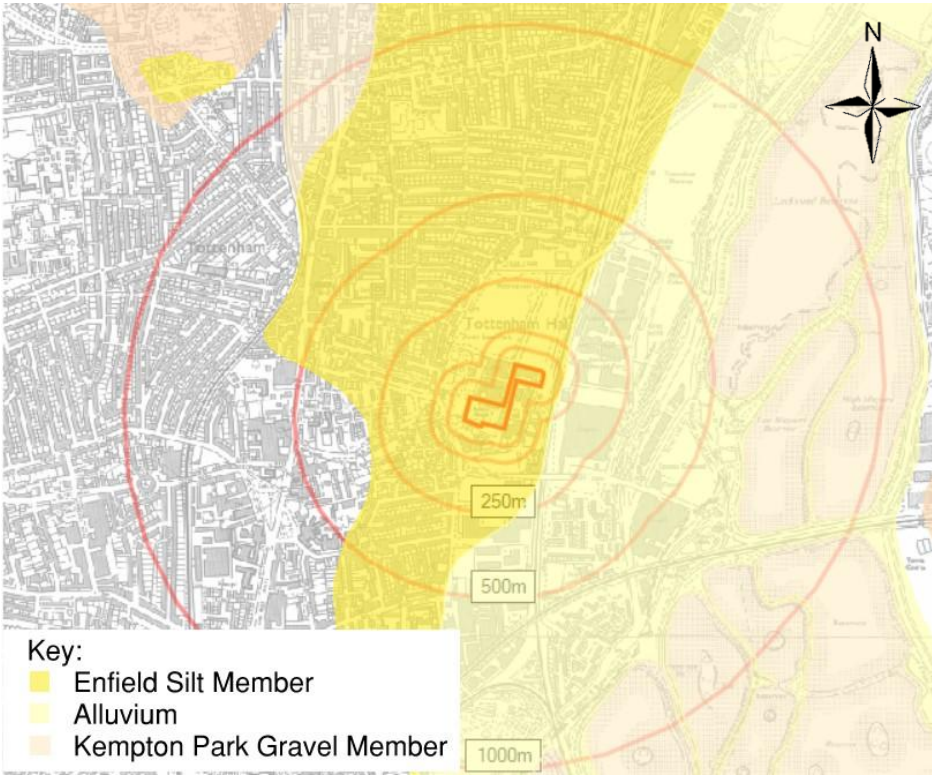


Figure 7: Superficial Geology (BGS, Accessed 15/06/2026)



Figure 8: Bedrock Geology (BGS, Accessed 19/02/2026)

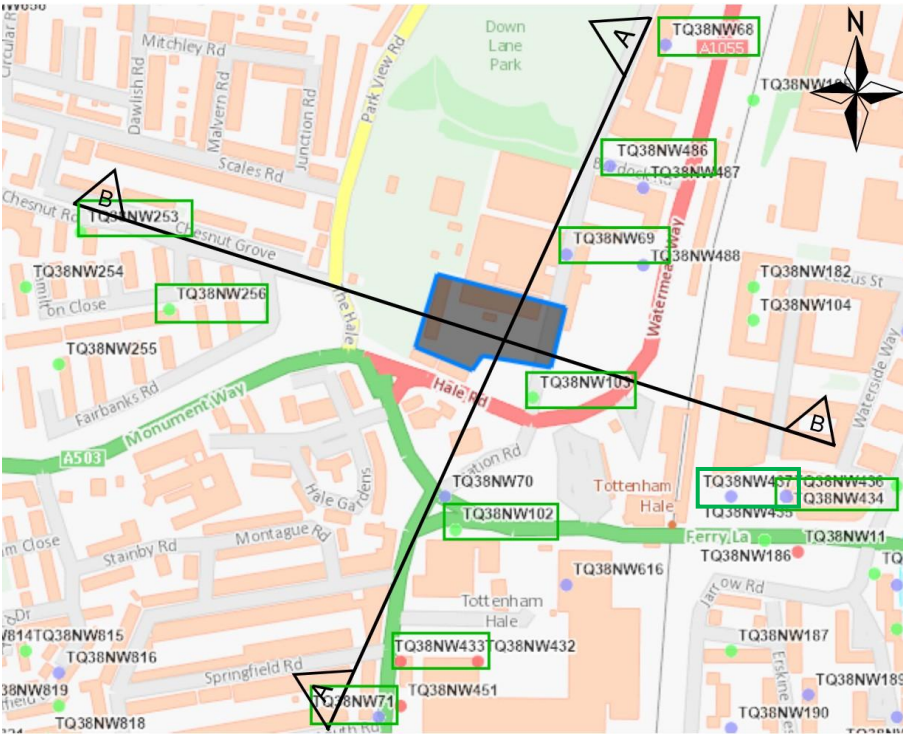


Figure 9: Extracted BGS borehole location plan taken from BGS GEOINDEX

Table 1: Local borehole information

BGS Ref:	Date	Distance from site [m] (Direction)	Ground Level (mOD)	Depth (m)
TQ38NW71	n/a	383 (SW)	7.63	8.01
TQ38NW433	1929	321 (SW)	8.22	137.16
TQ38NW102	1959	190 (SSW)	8.81	23.10
TQ38NW103	1959	48 (SSE)	8.81	23.10
TQ38NW69	n/a	75 (NE)	8.70	9.75
TQ38NW486	1987	166 (NE)	8.81	7.00
TQ38NW68	n/a	291 (NE)	8.72	10.00
TQ38NW253	1972	390 (WNW)	n/a	16.00
TQ38NW256	1972	290 (W)	n/a	16.00
TQ38NW185	1969	255 (ESE)	8.69	9.14
TQ38NW434	1954	300 (ESE)	n/a	6.08

Stratigraphy	BGS Borehole Reference	Description	Level at top of strata (mOD)	Thickness of Stratum (m)	Depth to base of Strata (mbgl)
Made Ground	TQ38NW71	No Description	7.60	0.30	0.30
	TQ38NW433	No Description	8.22	1.80	1.80
	TQ38NW102	Concrete Path	8.81	0.88	0.88
	TQ38NW103	Carriageway Construction	8.81	0.46	0.46
	TQ38NW69	No Description	8.70	0.61	0.61
	TQ38NW486	Flint, brick, and roots	8.81	0.65	0.65
	TQ38NW68	Topsoil	8.72	0.30	0.30
	TQ38NW253	Soil, brick, CLAY, and timber	n/a	1.50	1.50
	TQ38NW256	Soil, brick, and timber	n/a	0.50	0.50
	TQ38NW185	Concrete and rubble	8.69	0.38	0.38
	TQ38NW434	Vegetation soil	n/a	0.91	0.91
Enfield Silt	TQ38NW71	CLAY	7.30	1.22	1.52
	TQ38NW102	Sandy CLAY	7.93	1.82	2.70
	TQ38NW103	Sandy CLAY	8.35	1.22	1.68
	TQ38NW69	Brown CLAY	8.09	1.22	1.83
	TQ38NW486	Brown sandy CLAY	8.16	0.65	1.30
	TQ38NW68	Brown CLAY	8.42	0.61	0.91
	TQ38NW253	Brown CLAY	n/a	1.10	2.60
	TQ38NW256	Brown silty CLAY	n/a	2.00	2.50
	TQ38NW185	Soft, sandy CLAY	8.31	1.90	2.28
	TQ38NW434	Brown sandy loam	n/a	1.22	2.13
Kempton Park Gravels	TQ38NW71	Ballast	6.08	2.28	3.80
	TQ38NW433	Ballast	6.42	3.20	5.00
	TQ38NW102	Brown gravel in a matrix of grey CLAY, sandy GRAVEL	6.11	2.74	5.44
	TQ38NW103	Brown sandy GRAVEL	7.13	2.34	4.02
	TQ38NW69	Ballast	7.30	3.70	5.10
	TQ38NW486	GRAVEL and SAND	7.51	3.30	4.60
	TQ38NW68	Ballast	7.81	3.95	4.86
	TQ38NW253	Dense GRAVEL with sand	n/a	3.85	6.45
	TQ38NW256	Dense GRAVEL with sand	n/a	2.95	5.45
	TQ38NW185	GRAVEL and SAND	6.41	4.10	6.38
	TQ38NW434	Brown sandy ballast	n/a	Proven to 3.95	Proven to 6.08

Stratigraphy	BGS Borehole Reference	Description	Level at top of strata (mOD)	Thickness of Stratum (m)	Depth to base of Strata (mbgl)
London Clay	TQ38NW71	Blue CLAY	3.8	Proven to 4.18	Proven to 7.98
	TQ38NW433	Blue CLAY	3.22	17.00	22
	TQ38NW102	Stiff to very stiff fissured grey silty CLAY with occasional partings of fine sand	3.37	15.80	21.24
	TQ38NW103	Stiff to very stiff fissured grey silty CLAY with occasional partings of fine sand	4.79	17.56	21.58
	TQ38NW69	Blue CLAY	3.6	Proven to 3.97	Proven to 9.07
	TQ38NW486	Brownish grey fissured silty CLAY with partings of fine sand and silt	4.21	Proven to 2.40	Proven to 7
	TQ38NW68	Blue CLAY	3.86	Proven to 5.07	Proven to 9.93
	TQ38NW253	Firm to very firm stiff grey CLAY with sandy and silty layers	n/a	Proven to 9.55	Proven to 16
	TQ38NW256	Silty CLAY, grey silty sandy CLAY, grey CLAY with sandy and silty layers	n/a	Proven to 9.30	Proven to 14.75
	TQ38NW185	Stiff brown CLAY, hard blue fissured CLAY	2.31	Proven to 2.74	Proven to 9.12
Lambeth Group	TQ38NW433	Woolwich and Reading beds	-13.78	17.18	39.18
	TQ38NW102	Woolwich and Reading beds	-12.43	Proven to 1.06	22.3
	TQ38NW103	Woolwich and Reading beds	-12.77	Proven to 1.22	22.8
Thanet Sands	TQ38NW433	Hard Thanet SAND, green flint	-30.96	6.38	45.56
Chalk Group	TQ38NW433	Partly chalk and flint, chalk and flint, hard chalk	-37.34	Proven to 38.38	Proven to 83.94
n/a refers to not available as the actual levels on site were not recorded					

Table 2: Encountered Stratigraphy from BGS Borehole Logs

2.6.3 Geological Cross Section

The geological cross-section derived from historical borehole logs from BGS are presented in Figure 10 and Figure 11.

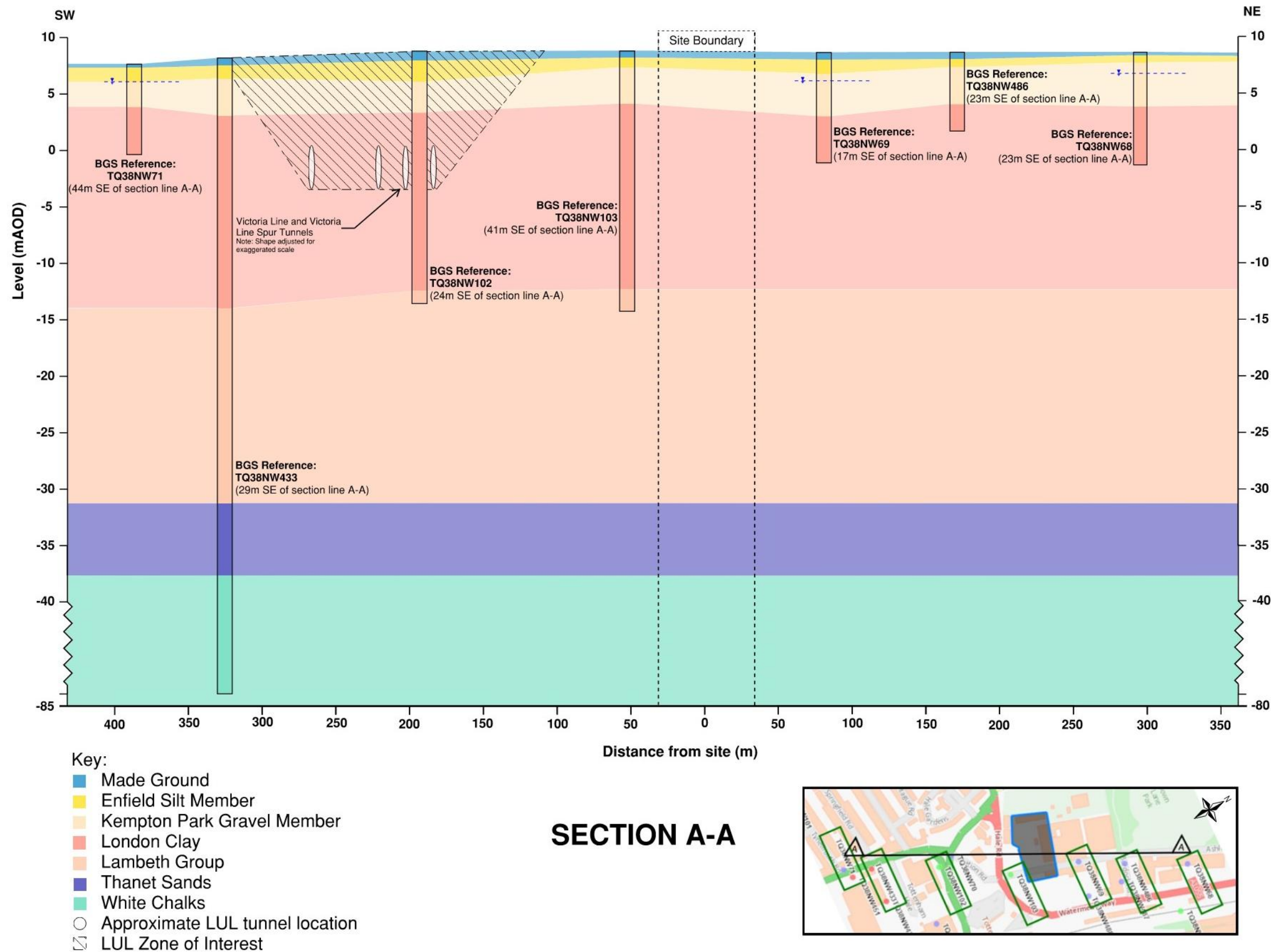
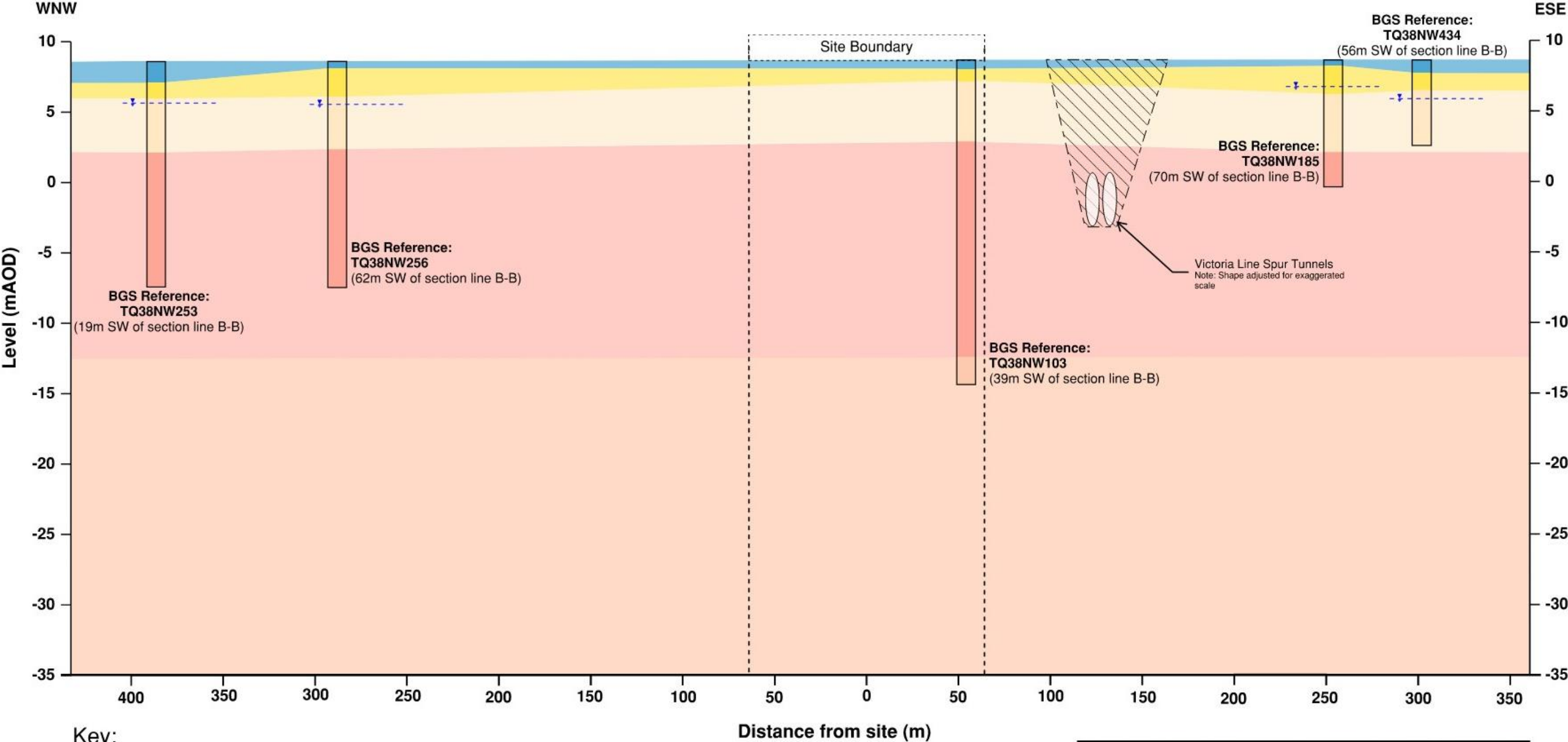


Figure 10: Geological Section A-A



- Key:
- Made Ground
 - Enfield Silt Member
 - Kempton Park Gravel Member
 - London Clay
 - Lambeth Group
 - Approximate LUL tunnel location
 - LUL Zone of Interest

SECTION B-B



Figure 11: Geological Section B-B

2.7 HYDROGEOLOGY & HYDROLOGY

Beneath the superficial deposits lies the London Clay Formation, which is designated as an Unproductive Bedrock Aquifer. This formation has very low permeability and therefore acts as an effective barrier to downward contaminant migration.

Underlying the London Clay are the Lambeth Group and the Thanet Sand Formation, both of which are designated as Secondary A Aquifers. Beneath the Thanet Sand lies the Chalk, which forms a Principal Aquifer. Principal Aquifers can yield significant quantities of water, and wells are often constructed into the Chalk to provide potable water supplies.

Overall, groundwater beneath the site is expected to be primarily associated with the superficial deposits, while deeper groundwater resources are afforded a degree of natural protection. These classifications are shown in Figure 12 and Figure 13.

Figure 14 presents a groundwater vulnerability map, which shows the extent to which the strata are susceptible to pollution. Strata close to the ground surface are generally considered to be more vulnerable.

2.7.1 BGS Groundwater and Water Strikes

The first groundwater strikes were recorded in boreholes:

- TQ38NW71 at 1.52 mbgl or 6.30 mAOD
- TQ38NW69 at 2.43 mbgl or 6.30 mAOD
- TQ38NW68 at 1.82 mbgl or 7.00 mAOD
- TQ38NW253 at 2.90 mbgl or 5.65 mAOD
- TQ38NW256 at 3.00 mbgl or 5.65 mAOD
- TQ38NW185 at 3.34 mbgl or 6.80 mAOD
- TQ38NW434 at 2.74 mbgl or 5.90 mAOD

In most cases, the first strike was encountered within the Kempton Park Gravels. No groundwater monitoring results are available.

2.7.2 Flood Risk Assessment

The nearest surface water feature to the site is the River Lea, which is located 400m east of the site. River Lea runs alongside multiple artificial reservoirs which are located approximately 800m east of the site.

According to the Environment Agency's Flood Map for Planning, the site is situated within Flood Zone 2, as shown in Figure 15, indicating a medium risk of flooding from rivers or the sea. The site is reported to be protected by spatial flood defences on the River Lea. Therefore, the risk of flooding from rivers or seas is deemed residual in the event of defence breach.

The Environment Agency long-term flood risk data classifies the risk from surface water and fluvial/tidal sources as very low and identifies flooding from reservoirs as unlikely for the surrounding area.

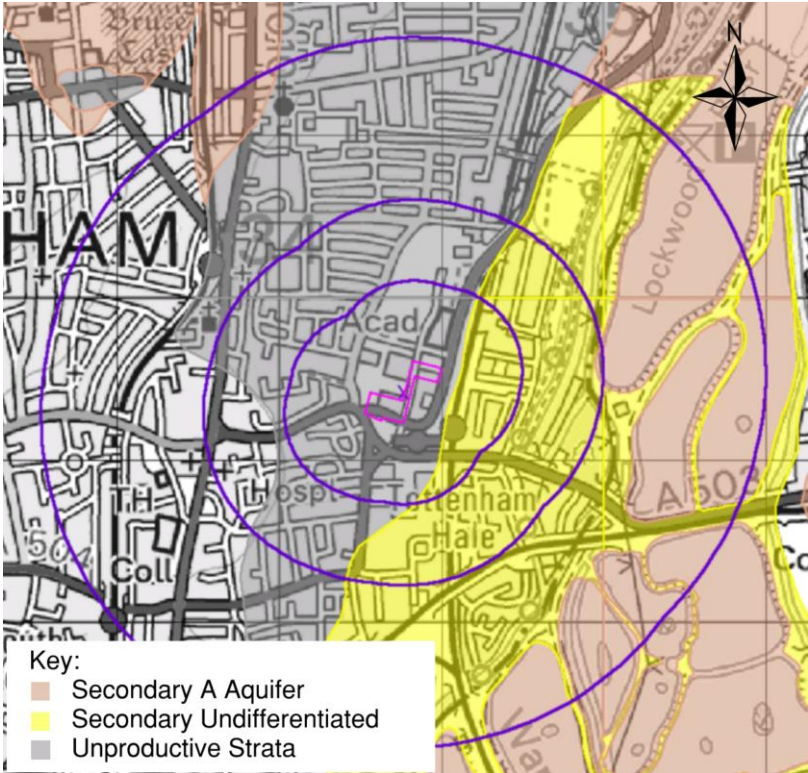


Figure 12: Superficial Aquifer Designations (BGS, Accessed 18/06/2026)

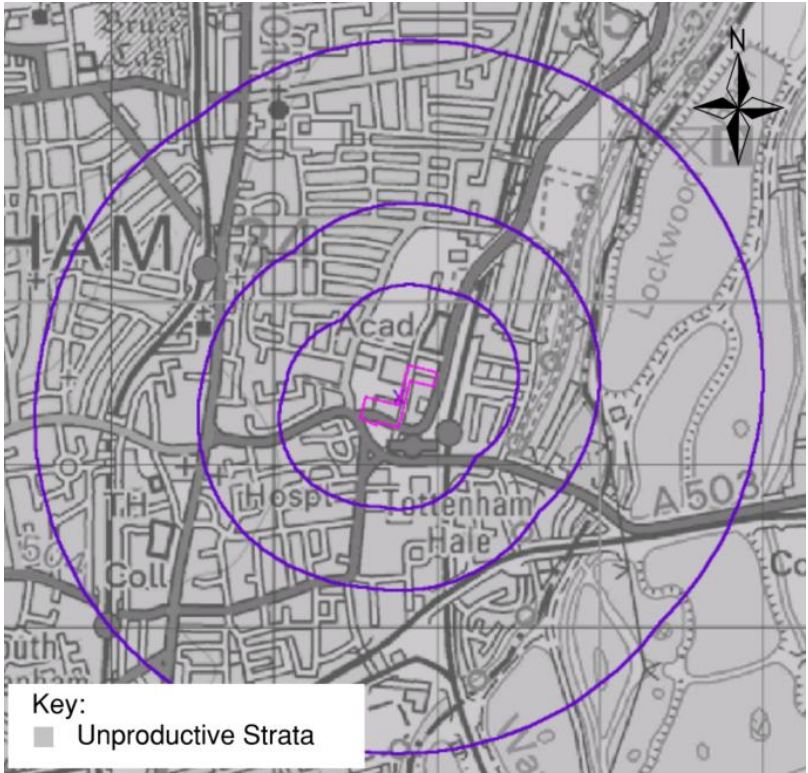


Figure 13: Bedrock Aquifer Designations (BGS, Accessed 18/06/2026)

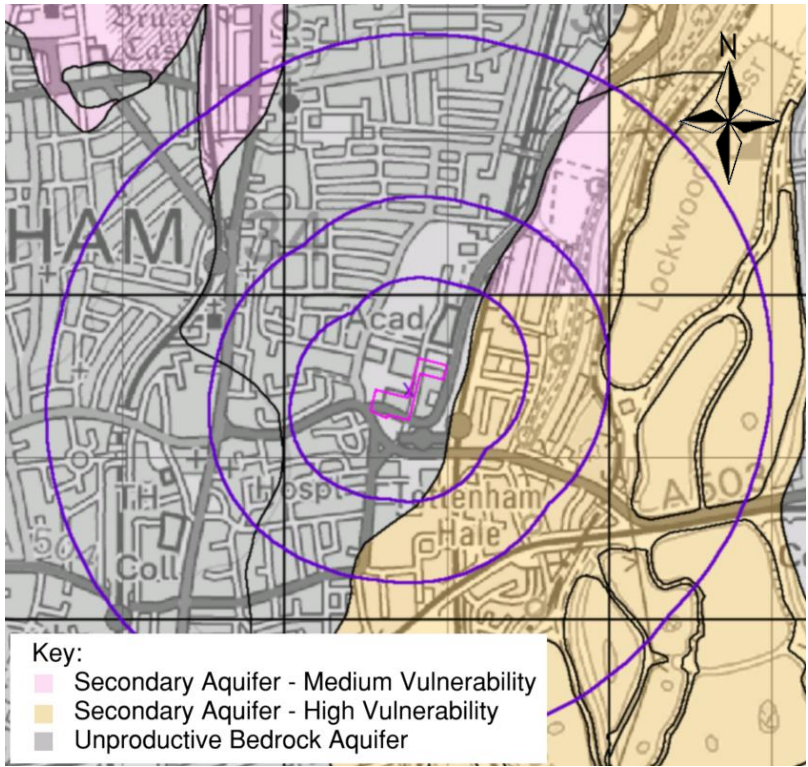


Figure 14: Groundwater Vulnerability (BGS, Accessed 18/06/2026)



Figure 15: Flood Map (for Planning, Environmental Agency, Accessed 18/06/2026)

2.7.3 BGS Groundwater Flooding Susceptibility

According to the Envirocheck Landmark Information Group (2026), the site is located within an area that is not susceptible to groundwater flooding.

2.7.4 Source Protection Zone

The site is located within the Outer Source Protection Zone II, as shown in Figure 16, i.e., the travel time between a pollutant to the protected source is less than or equal to 400 days. The site is also located 400m north-west of a Source Protection Zone I. This is associated with a groundwater abstraction point located approximately 650m west of the site and expired in 2013. There are no other noted operational groundwater abstractions within 2km of the site.

2.7.5 Target Standards for Water Body

The controlled waters protection must be carefully considered due to the SPZ and underlying aquifers. A piling/Foundation Works Risk Assessment may be required.

2.7.6 Potential Pathways

The potential on site contamination sources are not currently in hydraulic conductivity with the potential receptor, however, construction methods required for the proposed development could create new possible pathways and therefore linkage between source and receptor.

In the case that piled foundations are chosen as the most optimal foundation solution, possible pathways between contamination sources and the potential receptor may occur.

The description of pathways and their time scale are discussed below:

- **Groundwater Flow:** installed piles may provide a preferential flow path along their surfaces allowing contaminated perched groundwater above the Reading beds to flow to the Aquifer beneath or within areas that are in hydraulic conductivity. This is considered a possible permanent pathway that could be active as soon as construction of a pile is complete. Therefore, if piled foundations are proposed for this development, a Piling Assessment/Foundation Works Risk Assessment will need to be carried out, especially in the case that the pile embedment depth exceeds the base of the London Clay strata.
- **Leachates:** water draining through the Made Ground from above may collate contamination as it passes through, this water could then flow through pathways along the piles surface to the Principal Aquifer below or within areas that are in hydraulic conductivity. This is considered a permanent pathway that could be active as soon as construction of a pile is complete.
- **Direct Contact:** the installation of piles themselves could lead to contaminated soil being physically pushed or collapse into the Principal Aquifer below, or within areas that are in hydraulic conductivity. This would be an isolated and therefore temporary pathway, only active during pile installation.

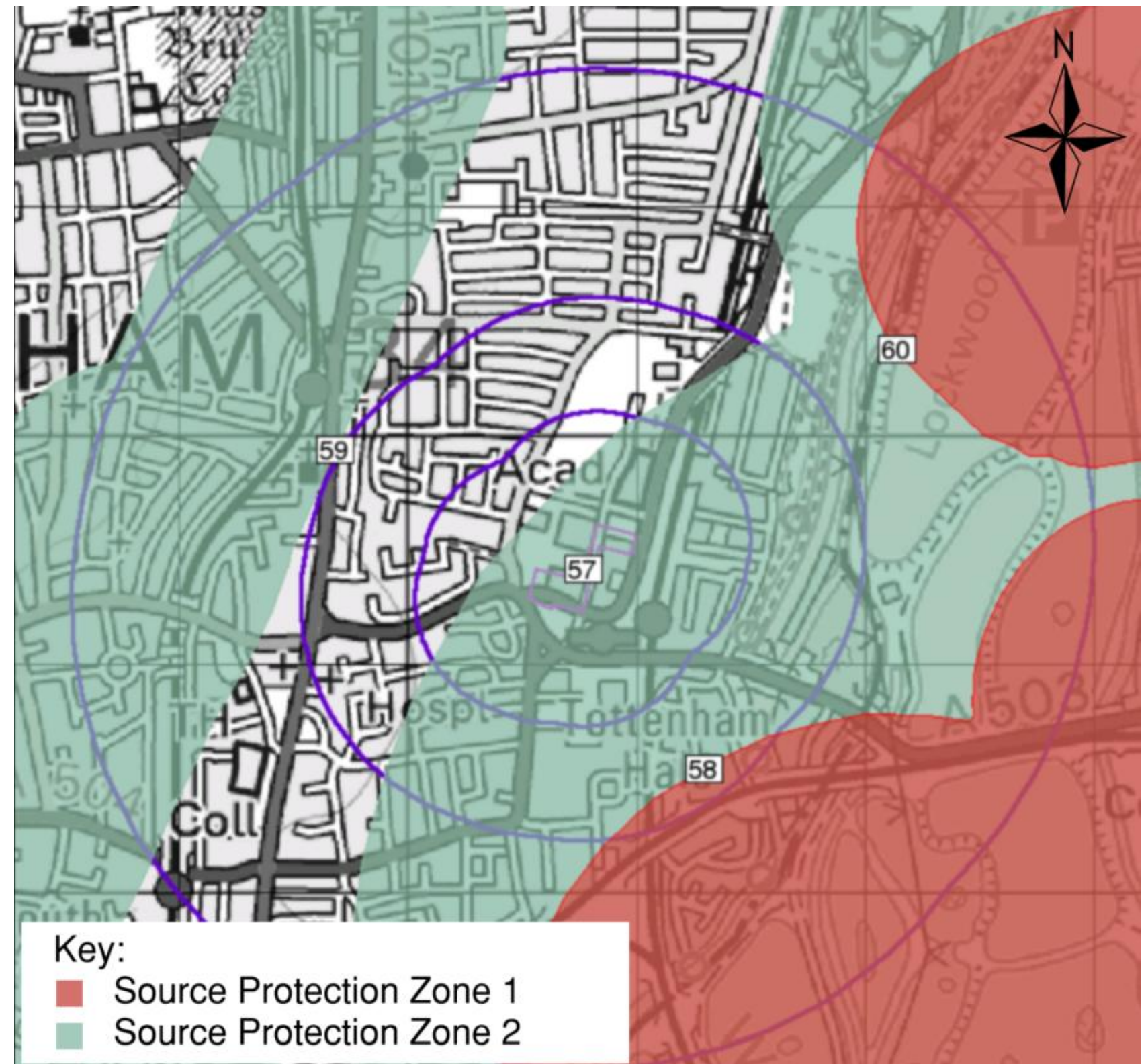


Figure 16: Source Protection Zones (Envirocheck Report, Accessed 18/06/2026)

2.8 GROUND AND GROUNDWATER AGGRESSIVITY

No test data is currently available on the ground and groundwater aggressivity at the site. Appropriate testing should be undertaken during the ground investigation to allow the correct assignment of a Design Sulphate Class (DSC) for buried concrete. BRE SD1 testing of soil and groundwater should be undertaken during GI to confirm DS/ACEC classes for buried concrete, piles and substructure.

2.9 MINING AND MINERAL EXTRACTION

No mineral extraction sites, recorded by the British Geological Survey (BGS), are found within 1km of the development site. No mining activity has been identified beneath or local to the site, as per the Mining Remediation Authority.

2.10 LISTED BUILDINGS

There are no listed structures on site. The closest Grade II listed buildings are located within a 300-500m radius west of site, as shown in Figure 17. These structures are listed as 2 Monument Way, List Entry Number: 1079226; Tottenham High Cross, List Entry Number: 1188856; and The Beehive Public House, List Entry Number: 1393614. These listed buildings are not anticipated to be a key geotechnical constraint based on distance, but heritage/structural constraints should be confirmed by the relevant consultants.

The site itself does not feature any structures and is listed as a brownfield site.

2.11 LOST RIVERS

Due to the significant and sprawling development within London, many historical rivers and streams have been 'lost' through time. These rivers were often covered by roads and/or directed through culverts to allow development above.

A lost river is noted in The Haringey City Council's Strategic Flood Risk Assessment (SFRA). Moselle Brook, previously River Moselle, was a direct tributary of the River Lea and has been culverted to artificially flow into Pymmes Brook near the junction of Mill Mead Road and Ferry Lane. The lost river runs approximately 50m west and 150m north of the site, as shown in Figure 18.

2.12 ARCHAEOLOGY

No site-specific archaeology assessment and/or reporting was available at the time of this study. According to Historic England, the site sits within the Tottenham Hale Tier 2 Archaeological Priority Area (APA). This designation reflects the potential for the site to contain archaeological deposits which relate to early medieval, medieval, and post-medieval settlement.

The presence of archaeological sensitivity at the location is a planning/project constraint which falls outside of the geotechnical scope, however, it is recommended that any future redevelopment involving deep excavation, piling, or ground disturbance should consider the potential for encountering archaeological remains. A specialist archaeological assessment would therefore be required prior to the commencement of intrusive works.

2.13 RADON GAS

According to the Envirocheck Report and the UK Health Security Agency, the site is in an area where less than 1% of homes are above the Action Level; no radon protection is anticipated subject to confirmation by the project architect/building regulations consultant.



Figure 17: Map indicating nearby Listed Structures (Historic England, Accessed 22/06/2026)

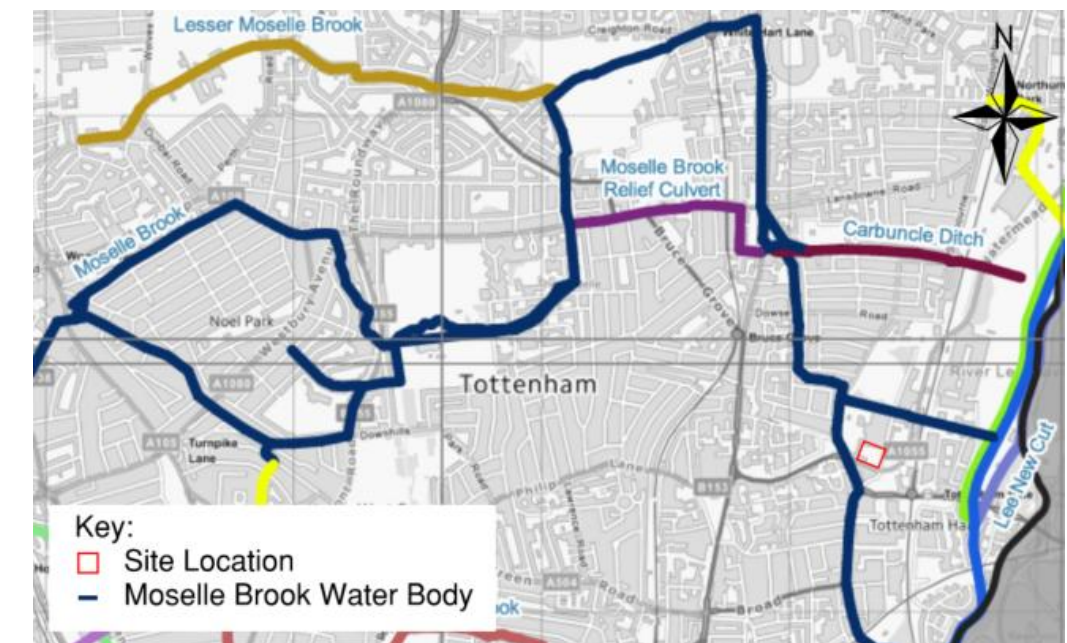


Figure 18: Moselle Brook (Map of Watercourses in Haringey, accessed: 25/06/2026)

2.14 UNEXPLODED ORDNANCE (UXO)

During World War II, the city of London was bombed significantly more than any other area in the UK, meaning unexploded ordnance (UXO) remains a potential risk to construction workers and nearby residents.

A qualitative assessment of the UXO risk has been carried out based on CIRIA C681, using historical land use in conjunction with the bombing hazard records from the Zetia Preliminary UXO Assessment (Figure 19) for the site. The variables considered are listed in Table 3. Scores have been assigned to each variable according to the potential risk for aerial-delivered UXO, as stated in CIRIA Report C681.

The risk level for the site is categorized as severe, high, medium, low, or negligible, depending on the assessment results. The level of risk determines the extent and type of mitigation required, as outlined in Table 4.

The potential presence of UXO is assessed with respect to the likelihood of encountering UXO during the proposed works. The site specific UXO risk assessment is shown in Table 5.

The calculated UXO risk score is **14**, indicating a high risk of UXO presence on site. It is therefore recommended that the client commission a full desk study and risk assessment by a specialist bomb-disposal company, undertake a UXO site survey. Also, where possible, adapt the design to avoid intrusive works in areas of suspected UXO.

Table 3: UXO Risk Score Variables

Variables	Score	Evidence
Bombing Density (informed by Zetia Preliminary UXO Report)	4	Very High
	3	High
	2	Moderate
	1	Low
Site Location	4	Cities
	3	Brownfield sites/ large towns
	2	Small Towns
	1	Rural
Historical Land Use at Time of Bombing	4	Site of military use, railway, marshland, power station / industrial centre
	3	Site adjacent to wartime military use, railway marshland, power station/ industrial centre.
	2	Site near to wartime military use, railway marshland, power station/ industrial centre.
	1	Greenfield site or agricultural land only
Evidence of post-war development on site	4	No evidence
	3	Minimal excavation
	2	Moderate excavation
	1	Excavation of entire site
Area of ground disturbance of the proposed works	4	Deep excavation over extended areas/ driven piles
	3	Deep excavation over limited areas/ shallow excavation over extended areas/ sheet and auger piles
	2	Excavation or services
	1	Boring drilling

Table 4: UXO Risk Levels and General Recommended Mitigation (from CIRIA C681)

Score	Risk	Mitigation
>16	Severe	Commission a full desk study and risk assessment by specialist bomb disposal company.
14 – 16	High	- Carry out a UXO site search using surface and down hole magnetometers. - Change the design works, if possible, to avoid suspected UXOs or intrusive groundworks.
11 - 13	Moderate	Commission a full desk study and risk assessment by specialist bomb disposal company.
9 - 10	Low	- Carry out simple site precautions: - Contractor/Operator “awareness” briefing. - Minimise the number of constructions works close to the excavation during digging. - Minimise the width and depth of excavation where possible. - Careful excavation methodology where feasible (i.e. hand excavation). - CAT scanning prior to excavation (Note that CAT scanning cannot conclusively detect UXOs)
< 9	Negligible	None (Though contractor should be made aware that the risk still exists). Standard risk mitigation measures apply.

Table 5: UXO Risk Score

Variables	Score	Evidence
Bombing Density	3	Moderate
Site Location	4	Site is situated within London
Historical Land Use	2	Site adjacent to wartime military use, railway, marshland, power station/ industrial centre
Post-War Development	2	The site has undergone redevelopment, with earlier industrial buildings completely replaced by residential buildings
Proposed Works	3	Deep excavation may be required in some areas due to anticipated structural loads; however, this is subject to change pending the results of site-specific ground investigation, as current geotechnical conditions and soil properties are not yet confirmed
Calculated UXO Risk Score	14	High

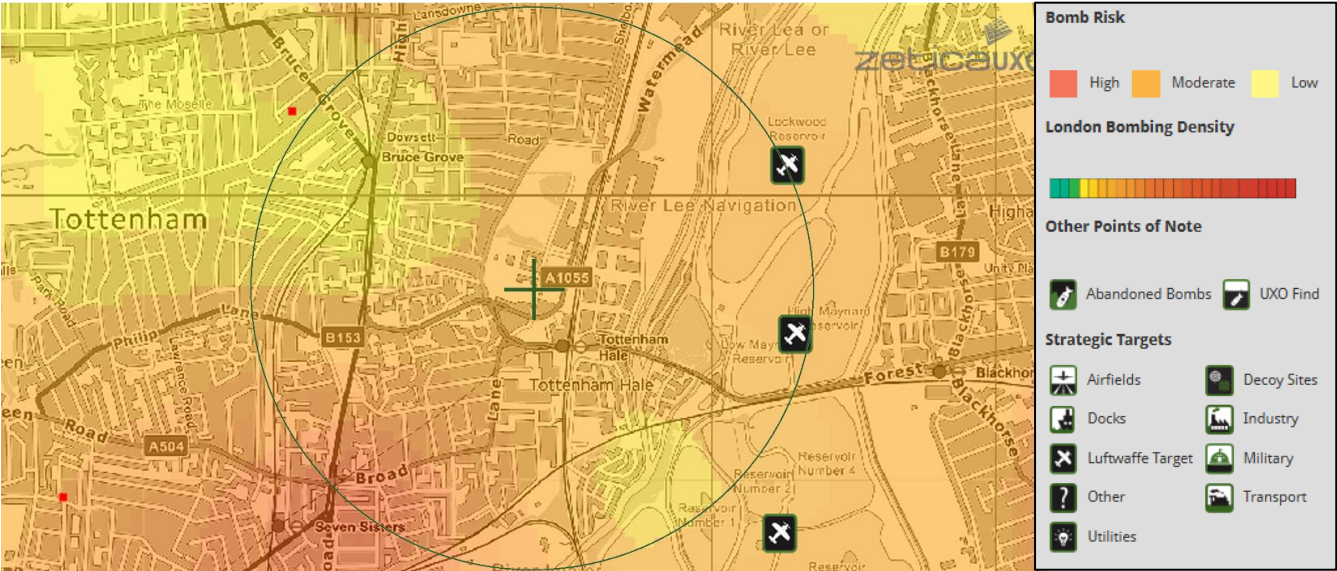


Figure 19: UXO Zetia Map (Accessed 22/06/2026)

2.15 ENVIRONMENTAL PUBLIC REGISTER INFORMATION

The following information is based on the Envirocheck Site Sensitivity Report, provided by Landmark. Relevant information within 500m of the site border is included and shown on plan in Figures 22-24 and described in the sections below.

2.15.1 Pollution Incidents to Controlled Waters

According to the Envirocheck Report, 14 pollution incidents to controlled water points were recorded within 500m south-east of the site, surrounding the Ferry Lane Locks:

Distance (m)	Pollutant	Date	Category
319	Oils	1989	III – Minor
323	Oils	1991	III – Minor
326	Oils	1994	III – Minor
354	Misc.	1990	III – Minor
357	Oils	n/a	II – Significant
384	Sewage	1991	III – Minor
385	Oils	1996	III – Minor
387	Oils	1994	III – Minor
388	Sewage	n/a	II – Significant
391	Sewage	1995	III – Minor
392	Chemicals	1992	III – Minor
448	Oils	n/a	III – Minor
460	Misc.	1991	III – Minor
464	Oils	1993	III – Minor

It is possible that remedial measures have been implemented since the incidents were recorded; in any case given the distance from the site, it is not considered likely to pose a significant risk to the proposed development.

2.15.2 Local Authority Pollution Prevention and Controls

One Integrated Pollution Prevention control is located 156m south-east of the site. It was registered to Veolia Energy & Utility Services UK Ltd. on 3rd of April 2020.

Three Local Authority Pollution Prevention and Controls records are noted within 500m:

- A petrol station 284m west of the site
- General waste incineration processes 298m north of the site
- A petrol filling station 466m south-east of the site

Petrol stations and waste incineration centres are known to use hazardous materials, but due to the distance from the site, contamination from these potential sources is not likely.

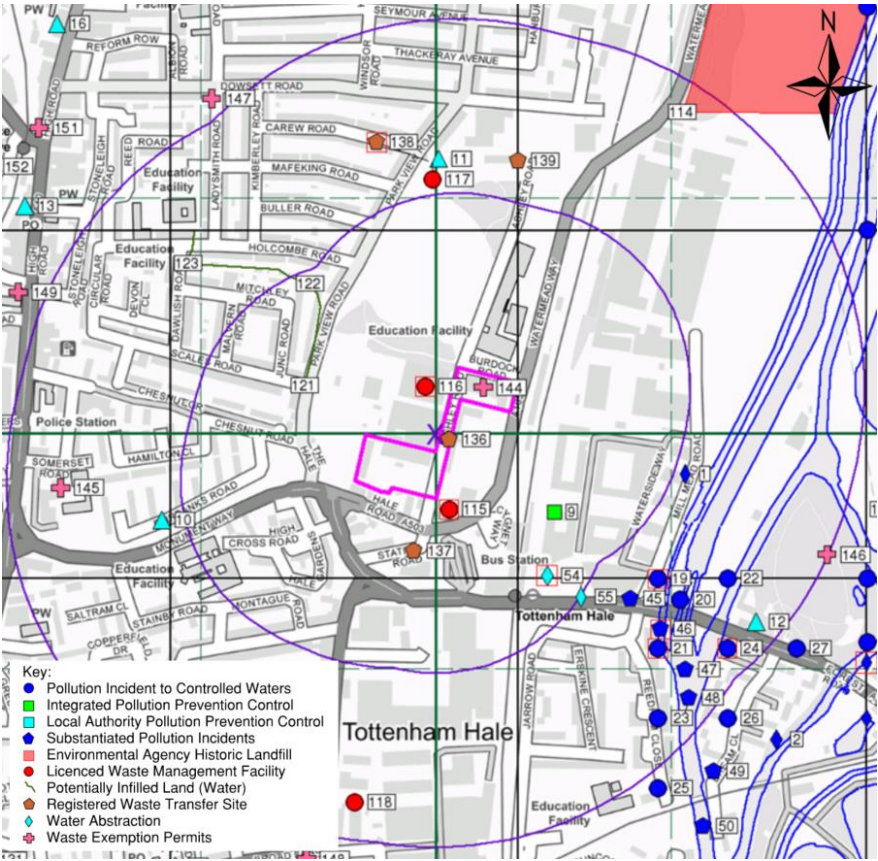


Figure 20: Environmental Public Register Information (Envirocheck Report, Accessed 19/02/2026)

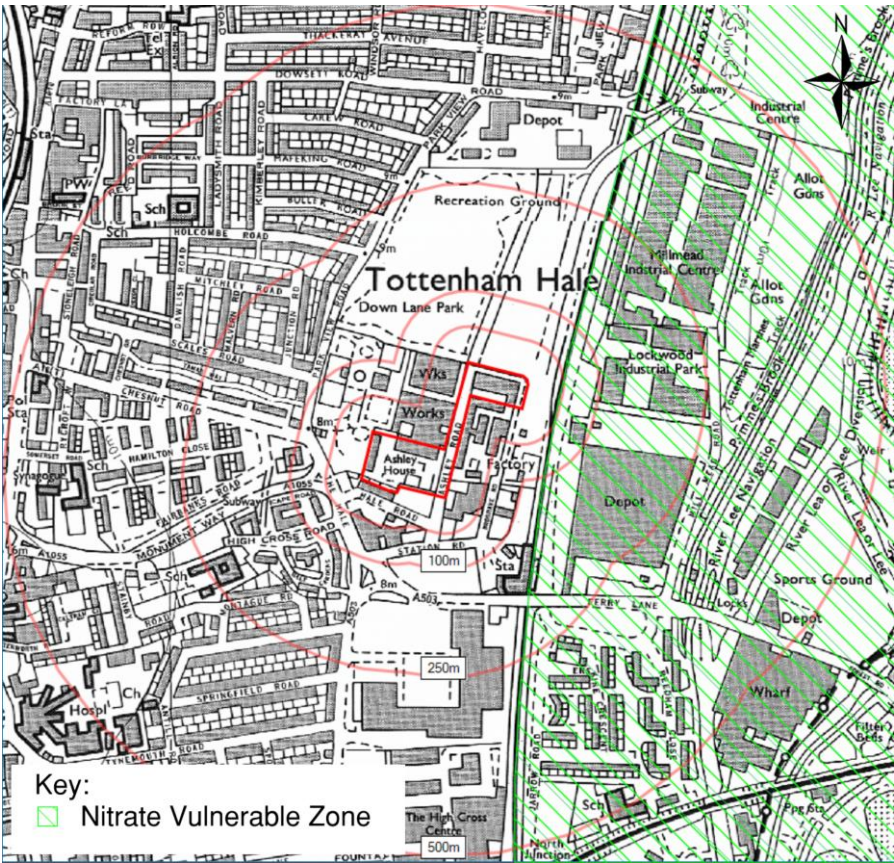


Figure 21: Nitrate Vulnerability Zones (Envirocheck Report, accessed 24/06/2026)

2.15.3 Substantiated Pollution Incidents

According to the Envirocheck Report, 7 substantiated pollution incidents were recorded within 500m south-east of the site, surrounding the Ferry Lane locks:

Distance (m)	Date	Pollutant	Water Impact	Land Impact
346	2016	Oils – Diesel	II – Significant	IV – None
374	2009	Hydrocarbons	II – Significant	IV – None
405	2014	Oils – Organic	II – Significant	IV – None
414	2016	Oils – Mixed waste	II – Significant	IV – None
416	2014	Organic Chemicals	II – Significant	IV – None
433	2012	Contaminated Water	I – Major	IV – None
471	2022	Oils	II – Significant	IV – None

2.15.4 Waste and Landfill

Based on the Envirocheck report, there is a historical landfill site 457m north-east of the site which was used for inert and industrial deposited waste. The first recorded input of the site was in 1955 and last recorded input in 1962. Given the distance from the site and a prolonged time since last use, it is unlikely to pose any potential contamination sources.

Items 115 (23m south of site), 116 (40m north of site), and 117 (296m north of site) in Figure 20 show previously active licensed waste management facilities with licences which expired in 1993, 2005, and 1995, respectively. Items 115 and 117 are categorised as household, commercial, and industrial waste transfer stations and amenity sites. Item 116 is categorised as a metal recycling plant. Due to their proximity to site, it is likely that they pose a risk of contamination within the site.

2.15.5 Potentially Infilled Land

Three areas of potentially infilled land have been identified, two of which were infilled by 1896, and one by 1952 during the urbanisation of the area; these are presented in Figure 22.

- One area approximately 114m west of the site (former land use: pond/marsh/river/stream/dock etc).
- One area approximately 232m north-west of site (former land use: pond/marsh/river/stream/dock etc).
- One area approximately 355m north-west of site (former land use: pond/marsh/river/stream/dock etc).

Given their distance from the site, these areas are not considered likely to pose a contamination risk to the proposed development.

2.15.6 Nitrate Vulnerability Zones

There is a Nitrate vulnerable zone 48m east of the site boundary, as shown in Figure 21. This area dictates that nitrate concentrations in sources of public drinking water exceed, or are likely to exceed, the EC limit of 50 milligrams per litre as per the purposes of the European Community (EC) Nitrate Directive (91/676/EEC).

- Waste disposal services
- Textile manufacturing
- Printers
- Petrol Filling Stations
- Brewers
- Printers Textile
- Electric motor works
- Commercial cleaning services
- Laundrettes
- Car body repairs
- Glass Fibre Manufacturers
- Aluminium fabricators
- Tungsten tool manufacturers and distributors

The printers, cleaning services and laundrettes pose a potential risk due to the use and storage of cleaning chemicals, solvents, and detergents – all of which may lead to soil or groundwater contamination if mishandled.

2.15.8 Commercial Services and Points of Interest

- A manufacturing and production point of interest approximately 50m north of the site which is classed as unspecified works or factories
- A petrol station and car wash 10m south of the site
- 2 unspecified works or factories facilities within 25m east of the site
- A waste storage, processing and disposal facility 5m east of site
- An unspecified works or factories facility 37m north-west of the site

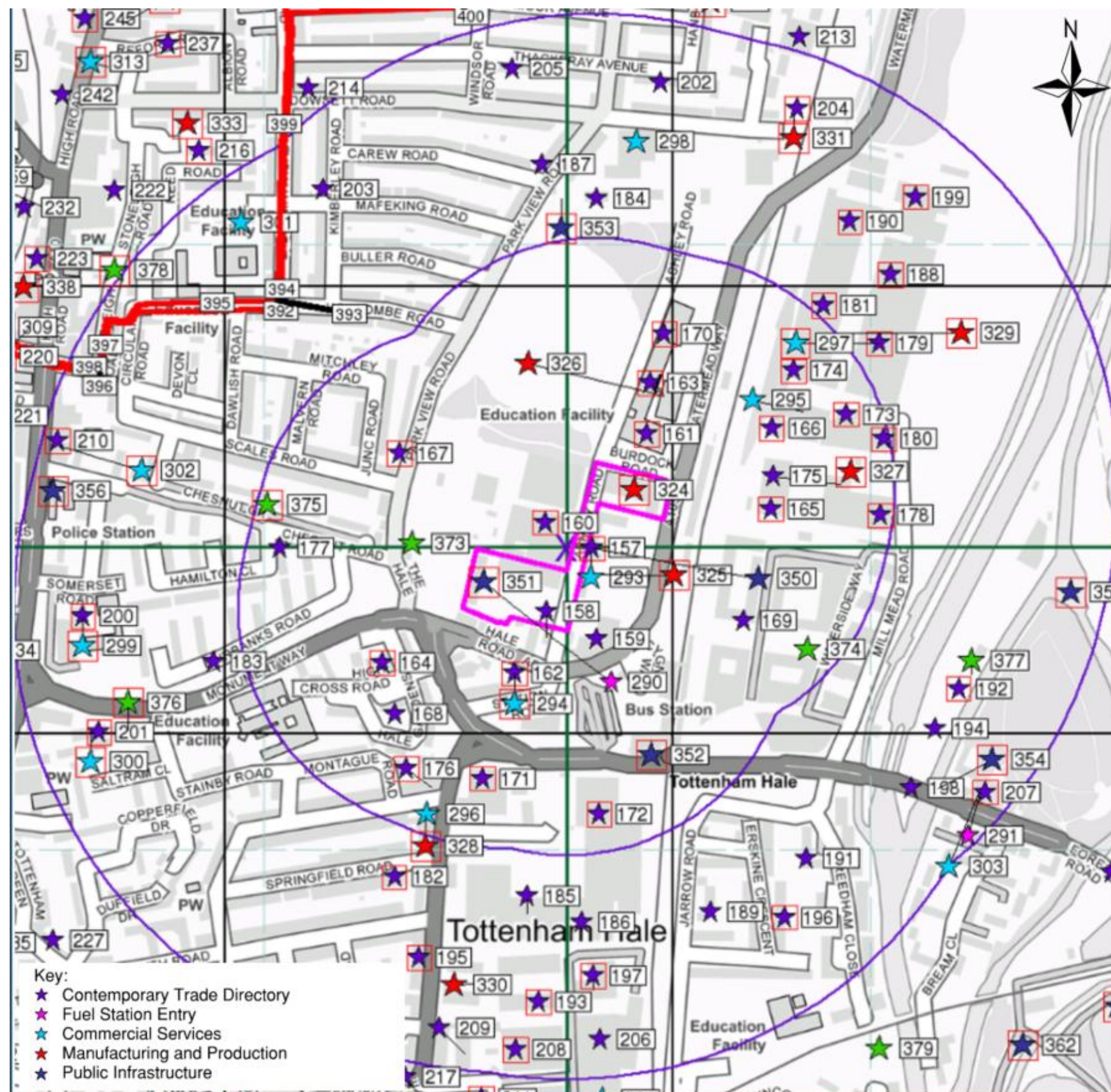


Figure 22: Contemporary Trade Directories, Commercial Services, and Points of Interest (Envirocheck Report, accessed 24/06/2026)

3 PRELIMINARY CONCEPTUAL SITE MODEL AND QUALITATIVE RISK ASSESSMENT

As indicated in previous sections, no site-specific ground investigations have been carried out on site. The Qualitative Risk Assessment carried out in this Desk Study is based on available information of the site and its surroundings, such as the historical and present use, relevant Envirocheck Reports and information from BGS.

3.1 POTENTIAL CONTAMINANT SOURCES

Potential sources are derived from typical contaminants associated with the site’s previous use, described in Section 2.5, using Potential Contaminants from the Assessment of Land, DEFRA 2002, Fact sheets from the World Health Organisation and observations made in the site walkover. Potential sources, their associated contaminants and their origin are listed in Table 6.

3.2 POTENTIAL PATHWAYS

The following pathways are identified based on the hydrogeological, hydrological, and geological setting of the site, as well as the anticipated works in the future:

- Ingestion, dermal contact, and inhalation of contaminated dust/vapour/fibres.
- Leaching of contaminants into perched and unperched groundwaters.
- Direct contact with temporary and permanent occupants.
- Piling works/drilling into ground.

3.3 POTENTIAL RECEPTORS

The potential receptors are summarised in Table 7. Receptors are identified with respect to the site’s proposed development, in line with the contaminated land statutory guidance (Part 2A, 2012).

3.4 PRELIMINARY QUALITATIVE RISK ASSESSMENT

To assess the potential risk, the Source – Pathway – Receptor relationship was evaluated. The presence of potential risk to the receptors is determined by identifying whether there are potential active pollutant linkages between the source and on or off-site receptors. For the potential linkages identified, a qualitative risk assessment is carried out to assign the relevant risk level.

3.5 CONCEPTUAL SITE MODEL

The conceptual site model is presented in Table 9. The model presents the Qualitative Risk Assessment and classifies the risk of each source-pathway-receptor relationship.

Table 6: Identified Sources of Contamination for the Proposed Development

Source	Possible Contaminants	Source of information
Made Ground (on-site)	Heavy metals, Asbestos, Sulphates, Phenols, PAHs, PCBs, petroleum hydrocarbons, VOCs, SVOCs and Ground Gas.	General and Historical maps
Contaminants from electrical sub-station (on-site)	PCBs and petroleum hydrocarbons	Historical maps
Contaminants due to historical site uses (e.g. ink and varnish factory) (on-site)	Heavy metals, Arsenic, Asbestos, Sulphates, Phenols, PAHs, PCBs, Hydrocarbons, Fuels, Oils and combustion residue.	Historical maps and Envirocheck Report

Source	Possible Contaminants	Source of information
Contaminants due to previous site use (e.g. residential building) (on-site)	Hydrocarbons (from vehicle activity and fuel use), heavy metals, oils, lubricants, asbestos (from building materials), organic compounds such as PCBs, PAHs, VOCs & SVOCs, Asbestos and phenols associated with waste storage.	Historical maps and Envirocheck Report
Contaminants due to historical site uses (e.g. boot & lace factory, woollen factory) (off-site)	Heavy metals, Arsenic, Asbestos, Sulphates, Phenols, PAHs, PCBs, Hydrocarbons, Fuels, Oils and combustion residue.	Historical maps and Envirocheck Report
Contaminants due to recent site use (e.g. petrol station, railway, railway depot, car wash, waste facility) (off-site)	Hydrocarbons (from vehicle activity and fuel use), heavy metals, oils, lubricants, asbestos (from building materials), organic compounds such as PCBs, PAHs, VOCs & SVOCs, Asbestos and phenols associated with waste storage.	Historical maps and Envirocheck Report
Groundwater (on-site)	Heavy Metals, Arsenic, Nitrates, Sulphates, Ground Gas, Hydrocarbons, Acetone, PAH’s, Cyanide and PCBs.	Envirocheck Report

Table 7: Identified Receptors for the Proposed Development

Receptor	Future Receptor	Temporary Receptor
On Site		
Human health of end users	Yes	No
Human health during site preparation and construction	No	Yes
Groundwater		Yes
Off site		
Neighbouring sites and site users (including neighbouring school)		Yes

Table 8: Risk Matrix for Preliminary Conceptual Site Model

			Consequence			
			Severe	Medium	Mild	Minor
			4	3	2	1
Probability	High	4	Very High Risk	High Risk	Moderate Risk	Moderate Risk
	Likely	3	High Risk	Moderate Risk	Low Risk	Low Risk
	Low	2	Moderate Risk	Low Risk	Low Risk	Very Low Risk
	Unlikely	1	Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table 9: Preliminary Conceptual Site Model for the Proposed Development

Potential Source	Contaminants of Concern	Potential Receptor	Possible pathway	Potential Pollutant Linkage	Likelihood	Comment	Consequences	Risk Classification
On-Site Sources								
Made Ground	Heavy metals, Arsenic, Asbestos, Sulphates, Phenols, PAHs, PCBs, petroleum hydrocarbons, VOCs, SVOCs and Ground Gas	Human health of end users	Ingestion, dermal contact, and inhalation of contaminated dust/vapour/fibres.	Potentially Active	Low to Likely	Most of the area will be covered by buildings or hardstanding, which would effectively interrupt any potential contamination pathways. Landscaping details are likely to change.	Severe	Low to Moderate Risk
		Human health of site preparation and construction workers	Ingestion, dermal contact, and inhalation of contaminated dust/vapour/fibres.	Potentially Active	Low to Likely	Appropriate PPE is to be worn. A watching brief, toolbox talks, and RAMS should be reviewed and implemented prior to commencement of works.	Severe	Low to Moderate Risk
		Human health of neighbouring site users (including neighbouring school)	Ingestion, dermal contact, and inhalation of contaminated dust/vapour/fibres.	Potentially Active	Low	Exposure is only likely during excavation, temporary storage, or removal of excavated materials. Appropriate precautions during excavation are assumed.	Severe	Moderate Risk
		Groundwater	Leachates	Active	Likely	Pollutants from the made ground can be absorbed and carried by the groundwater and this could migrate across site easily within the Secondary A Aquifer.	Medium	Moderate Risk
Previous site use (e.g. ink and varnish factory, boiler room, rubbish storage, waste bins, electrical substations, etc) (on-site)	Hydrocarbons (from vehicle activity and fuel use), heavy metals, oils, lubricants, asbestos (from building materials), and organic compounds such as PCBs, PAHs, VOCs, SVOCs, and phenols associated with waste storage.	Human health of site preparation and construction workers	Ingestion, dermal contact, and inhalation of contaminated dust/vapour/fibres.	Potentially Active	Low to Likely	Appropriate PPE is assumed to be worn. A watching brief, toolbox talks, and RAMS should be reviewed and implemented prior to commencement of works.	Severe	Moderate to High Risk
		Human health of end users	Ingestion, dermal contact, and inhalation of contaminated dust/vapour/fibres.	Potentially Active	Low	Detailed ground investigation involving geoenvironmental testing must be conducted to reduce uncertainty around potential contamination. A GQRA will be produced based on the findings of the GI to characterise risk.	Severe	Moderate Risk
			Leachates through groundwater	Potentially Active	Low to Likely	Given modern containment standards and maintenance responsibilities typically managed by the utility provider, the likelihood of significant leakage is low. Consequently, the overall risk to human health receptors is considered minor.	Severe	Low to Moderate Risk
		Human health of neighbouring site users	Ingestion or inhalation of contaminated dust/vapour/fibres	Potentially Active	Low	Exposure is only likely during excavation, temporary storage, or removal of excavated materials. Appropriate precautions during excavation are assumed. It is assumed the contractor will follow best practice and use mitigation techniques such as dust suppression via water or appropriate site hoarding for fibre containment. RAMs and mitigation strategy must be drafted by the contractor.	Severe	Low Risk
			Leachates through groundwater	Potentially Active	Low to Likely	In the end use stage, there is a low likelihood of contaminants leaching into the groundwater and affecting drinking-water supplies, as this would require the contaminants to be mobilised at high concentrations, transported through the groundwater system, enter service pipes, and be consumed regularly by a receptor.	Severe	Low to Moderate Risk

Potential Source	Contaminants of Concern	Potential Receptor	Possible pathway	Potential Pollutant Linkage	Likelihood	Comment	Consequences	Risk Classification
Groundwater	Heavy metals, Arsenic, Asbestos, Sulphates, Phenols, PAHs, PCBs, petroleum hydrocarbons.	Human health of end users	Ingestion and dermal contact	Potentially Active	Unlikely	The proposed development shows that most of the site will be covered by buildings or hard surfaces, which would effectively interrupt any potential contamination pathways. It is very unlikely that end users will be exposed to groundwater.	Severe	Low Risk
		Human health of site preparation and construction workers	Ingestion and dermal contact	Potentially Active	Likely	Pile foundations may be likely for the construction of the shared living block, so it's likely that there will be contact between human and ground water.	Severe	Moderate Risk
		Sewer outlets	Leachates	Potentially Active	Low	Some possibility of contact via leaching of groundwater through contaminated ground.	Medium	Low Risk
On-site electrical substation	PCBs and petroleum hydrocarbons	Human health of end users	Leachates	Potentially Active	Low	Given modern containment standards and maintenance responsibilities typically managed by the utility provider, the likelihood of significant leakage is low. Consequently, the overall risk to controlled waters and human health receptors is considered minor.	Severe	Low to Moderate Risk
		Human health of site preparation and construction workers	Ingestion and dermal contact and inhalation of contaminated dust/vapour/fibres	Potentially Active	Low	Given modern containment standards and maintenance responsibilities typically managed by the utility provider, the likelihood of significant leakage is low. Consequently, the overall risk to controlled waters and human health receptors is considered minor.	Severe	Low to Moderate Risk
Off-Site Sources								
Petrol Station, Car Wash, Electrical Sub-Station, Waste Facility	Hydrocarbons, aromatic hydrocarbons (PAH's), metals, PCB's, and petroleum hydrocarbons, organic and inorganic BTEX, asbestos, and phenols	Human health of construction workers	Ingestion, dermal contact and inhalation od contaminated dust/vapour/fibres	Potentially Active	Likely	Exposure is only likely during excavation, temporary storage, or removal of excavated materials. Appropriate precautions during excavation are assumed.	Medium	Moderate Risk
			Leaching of contaminant into perched and unperched groundwater					
		Human health of end users	Leaching of contaminants into perched and unperched groundwater	Potentially Active	Likely	The proposed development shows that most of the site will be covered by buildings or hard surfaces, which would effectively interrupt any potential contamination pathways. It is very unlikely that end users will be exposed to groundwater.	Medium	Moderate Risk
		Groundwater (principal Aquifer)	Piling works/drilling	Potentially Active	Unlikely	It is assumed that appropriate safety protocols are followed on the adjacent site and that all workers are equipped with and use suitable PPE.	Medium	Moderate Risk
Railway and Railway Depot	Heavy metals, hydrocarbons	Human health of construction workers/end users	Ingestion, dermal contact and inhalation od contaminated dust/vapour/fibres	Potentially Active	Unlikely	Exposure is only likely during excavation, temporary storage, or removal of excavated materials. Appropriate precautions during excavation are assumed.	Low	Low Risk
			Leaching of contaminant into perched and unperched groundwater					

Potential Source	Contaminants of Concern	Potential Receptor	Possible pathway	Potential Pollutant Linkage	Likelihood	Comment	Consequences	Risk Classification
		Groundwater (principal Aquifer)	Piling works/drilling	Potentially Active	Unlikely	It is assumed that appropriate safety protocols are followed on the adjacent site and that all workers are equipped with and use suitable PPE.	Medium	Moderate Risk
Historic industrial structures (e.g., Boot and Lace factory, Woollen Factory, Pencil Factory)	Hydrocarbons (from vehicle activity and fuel use), heavy metals, oils, lubricants, asbestos (from building materials), and organic compounds such as PCBs, PAHs, VOCs, and SVOCs.	Human health of site preparation and construction workers	Ingestion, dermal contact, and inhalation of contaminated dust/vapour/fibres.	Potentially Active	Low	It is assumed that appropriate safety protocols are followed on the adjacent site and that all workers are equipped with and use suitable PPE.	Medium	Low Risk
		Human health of end users	Ingestion, dermal contact, and inhalation of contaminated dust/vapour/fibres.	Inactive	Low	The proposed development shows that most of the site will be covered by buildings or hard surfaces, which would effectively interrupt any potential contamination pathways.	Medium	Low Risk